Russound®

CAS44
Multisource Multiroom
Audio Controller/Amplifier

IMPORTANT SAFEGUARDS

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER - SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

If you have any questions please call Russound Inc. at 1-800-638-8055 or 603-659-5170.

Safety Instructions:

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the appliance in the operating instructions should be adhered to.
4. Follow Instructions - All operating and user instructions should be followed.
5. Water and Moisture - The appliance should not be used near water; for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.
6. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart combination to overturn.

7. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings, or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization - Precaution should be taken so that the grounding or polarization means of an appliance is not defeated.
12. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, receptacles, and the point where they exit from the appliance.
13. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.
14. Non-use Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
15. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through the openings.
16. Damage Requiring Service - The appliance should be serviced by qualified service personnel when:

    A. The power supply cord or the plug has been damaged; or

    B. Objects have fallen, liquid has been spilled into the appliance; or

    C. The appliance has been exposed to rain; or

    D. The appliance does not appear to operate normally; or

    E. The appliance has been dropped or the enclosure is damaged.

17. Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Precautions:

1. Power – WARNING: BEFORE TURNING ON THE POWER FOR THE FIRST TIME, READ THE FOLLOWING SECTION CAREFULLY.
2. Do Not Touch The Unit With Wet Hands – Do not handle the unit or power cord when your hands are wet or damp. If water or any other liquid enters the cabinet, unplug the unit from power immediately and take it to a qualified service person for inspection.
3. Location of Unit – Place the unit in a well-ventilated location. Take special care to provide plenty of ventilation on all sides of the unit especially when it is placed in an audio rack. If ventilation is blocked, the unit may overheat and malfunction. Do not expose the unit to direct sun light or heating units as the unit internal components temperature may rise and shorten the life of the components. Avoid damp and dusty places.
4. Care – From time to time you should wipe off the front and side panels of the cabinet with a soft cloth. Do not use rough material, thinners, alcohol or other chemical solvents or cloths since this may damage the finish or remove the panel lettering.

Conforms to UL 6500 Certified to CAN/CSA

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INTRODUCTION

Thank you for choosing the Russound® CAS44 controller/amplifier to enhance your home with distributed audio.

The CAS44 delivers full-featured multiroom/multi-source, high-fidelity audio at an entry-level price.

Key features include:

• Four sources delivered to any one of four zones for sharing music throughout the home.

• Scalable to eight zones by connecting two CAS44s for extended zone coverage (CAA66s and CAS44s do not interoperate).

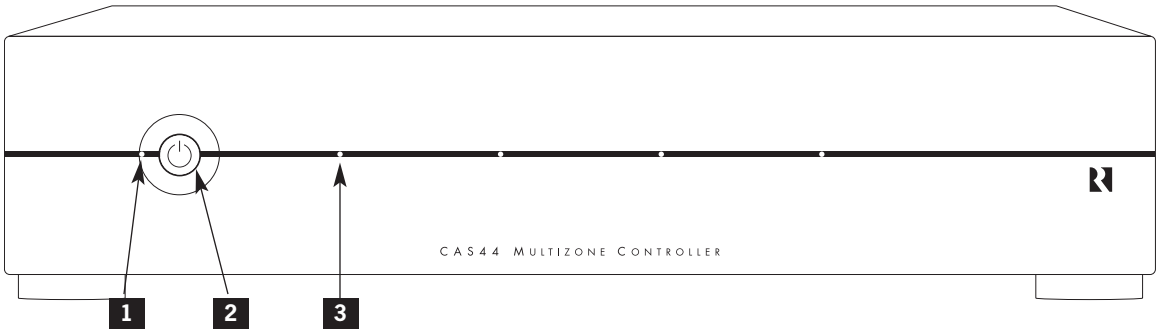
• Lower price to ease homeowner entry into the multiroom market.

The CAS44 kit ships with a remote control (CAS-RC) and elegant keypads (KPL or KP4 models) for home audio one-touch control. These soft-touch, amber backlit single-gang keypads provide IR signal passthrough and adjustments to the room's audio settings. From each keypad, the user can adjust bass, treble, balance and volume. The system supports multiple keypads per zone for convenient access and includes an RS232 connection for integration with home automation systems.

Russound's controller/amplifiers meet the needs of homeowners who want to experience true audio fidelity throughout the home. And with the CAS44, customers have more home audio choices at a cost-effective price.

COMPONENT GUIDE
CAS44 FRONT PANEL

The CAS44 front panel features a power switch with a push on/push off action and a blue LED “power on” indicator to the left which illuminates when the unit is on. The four zone LEDs light up amber when the zone is active.

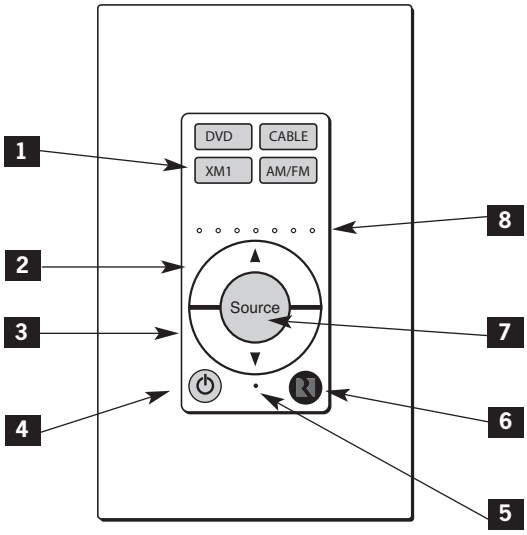


1 POWER ON/OFF LED - Indicates power on or off

2 MAIN POWER SWITCH - Turns power on and off

3 ROOM LED INDICATORS - Indicate when a room is on (amber) or off (not lit)

COMPONENT GUIDE
KP4 KEYPAD



KP4 Keypad

1 SOURCE NAME - Four clear windows with replaceable source name labels. Current source selected is backlit amber.

2 VOLUME UP - Raises the volume for the room/adjusts User Menu options.

3 VOLUME DOWN - Lowers the volume for the room/adjusts User Menu options.

4 POWER - Turns room ON or OFF when pressed once. When OFF, press and hold will turn OFF all zones. Power button remains lit when OFF if any other zone in the system is ON.

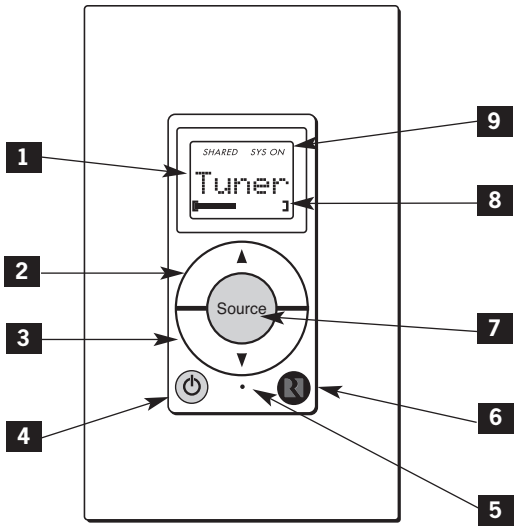
5 IR CONFIRMATION/LOUDNESS LED - Blue LED blinks to confirm IR signal reception, and remains lit when Loudness feature is enabled.

6 IR RECEIVER - Receives IR signals and passes them to the controller and source equipment. Also used when the keypad is operated using the CA System remote controls.

7 SOURCE SELECT - Press and release scrolls through the available sources. Press and hold brings up the USER MENU for Loudness, Bass, Treble, etc.

8 VOLUME LEVEL - Volume level indicator LEDs light up from left to right to indicate volume level. Also used to indicate user option settings.

COMPONENT GUIDE
KPL KEYPAD



KPL Keypad

1 LCD PANEL - 5-character amber backlit display shows source name, volume and room status.

2 VOLUME UP - Raises the volume for the room/adjust User Menu options.

3 VOLUME DOWN - Lowers the volume for the room/adjust User menu options.

4 POWER (ALL OFF) - Turns room ON or OFF when pressed once. When OFF, press and hold will turn OFF all zones. Power button remains lit when OFF if any other zone in the system is ON.

5 IR CONFIRMATION/LOUDNESS LED - Blue LED blinks to confirm IR signal reception, and remains lit when Loudness feature is enabled.

6 IR RECEIVER - Receives IR signals and passes them to the controller and source equipment. Also used when the keypad is operated using the CA System remote controls.

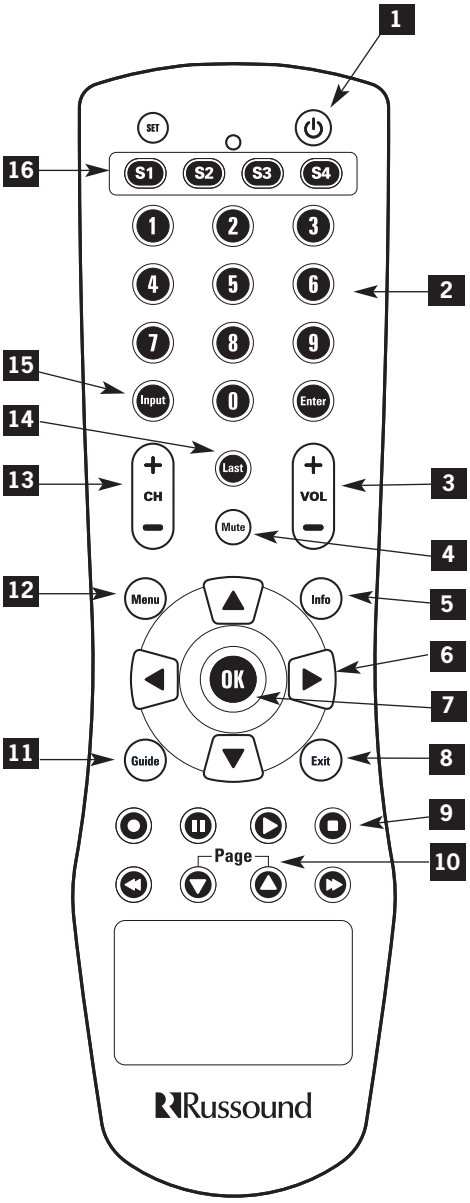
7 SOURCE SELECT - Press and release scrolls through the available sources. Press and hold brings up the USER MENU for Loudness, Bass, Treble, etc.

8 VOLUME LEVEL - 21-segment volume level bar increases from left to right to indicate volume level/indicates user option settings.

9 SYSTEM INFO - SYS ON indicates other active zones and SHARED indicates the selected source is in use in another zone.

COMPONENT GUIDE
CAS-RC REMOTE CONTROL

All source setup and control is contained in the CAS-RC remote control. The CAS44 controller does not require programming for the controller or for source setup.



1 POWER - Turn on or off selected zone.

2 NUMERIC INPUT - Number buttons for direct input of frequency, channel, etc.

3 VOLUME UP/DOWN - Raise or lower the volume in the zone.

4 MUTE - Mutes/unmutes tuner audio output..

5 INFO - Display current channel and program information.

6 CURSOR KEYS - Move the cursor in the program guide and menu screens.

7 OK - Choose the highlighted menu option. Performs “Enter” function for devices.

8 EXIT - Exit out of the selected component’s menu or guide..

9 TRANSPORT KEYS - Controls components (Play, pause, Stop, Forward, etc.).

10 PAGE UP/DOWN - For use with cable or satellite boxes.

11 GUIDE - Displays the program guide.

12 MENU - Access the menu of the selected component.

13 CHANNEL UP/DOWN - Incrementally scrolls through channels or tuned stations.

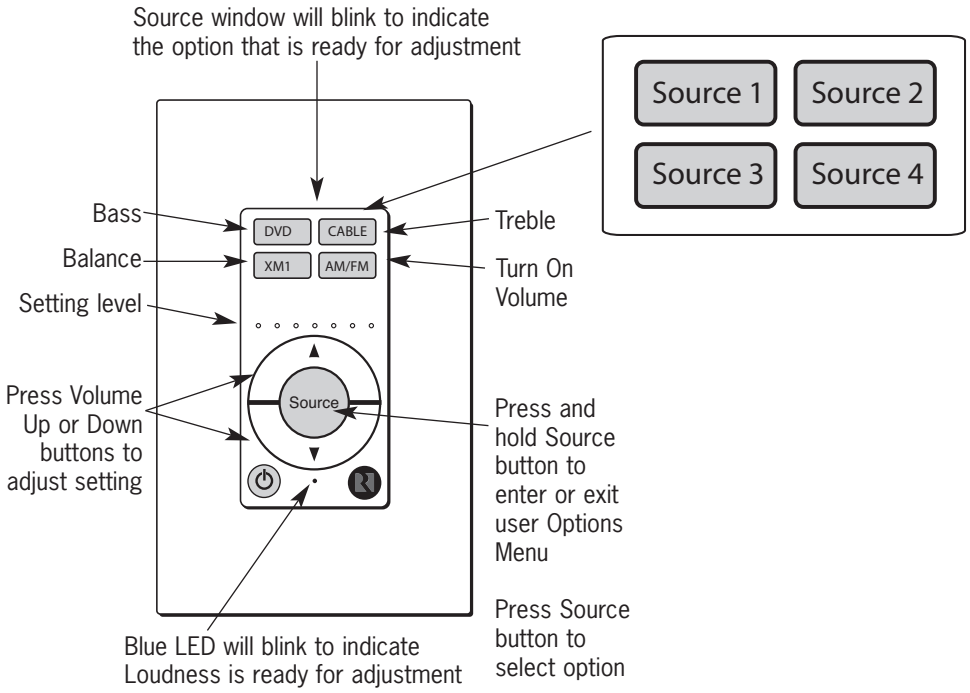
14 LAST - Recall the last channel or page back one screen in the main menu.

15 INPUT - Switch the input of the selected component.

16 SOURCE KEYS - Selects specific sources, and changes the keypad layer for source control.

OPERATION
USER OPTIONS SETTINGS

KP4 Keypad User Options Mode Operation



KP4 User Options Mode

The User Options Mode allows the user to adjust the audio properties of a particular zone. The audio features that can be adjusted are: Bass, Treble, Balance, Turn On Volume and Loudness. The four Source windows and the blue LED blink to indicate the option is ready for adjustment.

To enter the User Options Mode, press and hold the Source button when the zone is on. A press and hold of the Source button (or a 9-second timeout) returns the keypad to regular operation.

The top left (Source 1) button will temporarily blink to indicate "Bass" is ready for adjustment. Subsequent presses of the Source button toggle through Treble (Source 2), Balance (Source 3), Turn On Volume (Source 4) and Loudness (blue LED).

Once an option is selected, the Volume Up/Down buttons are used to adjust settings. The volume indicator LEDs temporarily light to show the option setting.

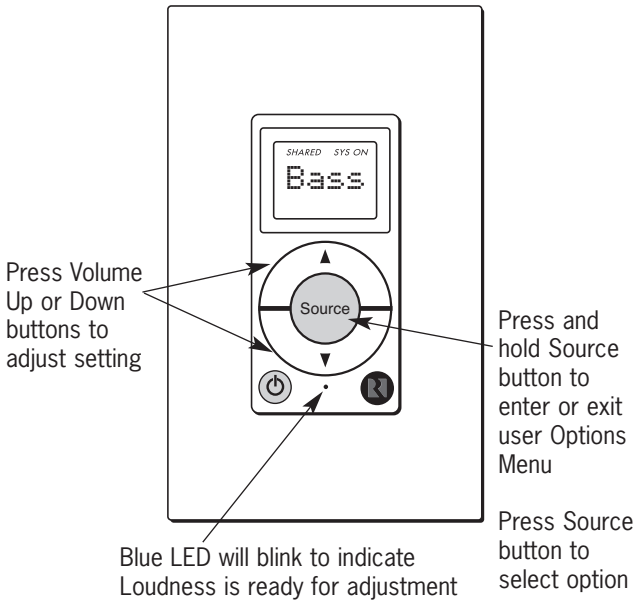
Setting Loudness

In User Options Mode, the blue LED will blink rapidly when Loudness is selected for adjustment. To turn Loudness ON, press the Volume Up or Down button once. The blue LED lights solid then blinks again. To turn Loudness OFF, press Volume Up or Down once. The blue LED goes dark for a moment, then blinks again.

When the keypad is in operation, the blue LED lights solid when Loudness is activated.

OPERATION
USER OPTIONS SETTINGS

KPL Keypad User Options Mode Operation


SHARED SYS ON
Bass
Source
Press Volume Up or Down buttons to adjust setting
Press and hold Source button to enter or exit user Options Menu
Press Source button to select option
Blue LED will blink to indicate Loudness is ready for adjustment

KPL User Options Mode

The User Options Mode allows the user to adjust the audio properties of a particular zone. The audio features that can be adjusted are: Bass, Treble, Balance, Turn On Volume and Loudness.

To enter the User Options mode, press and hold the Source button when the zone is on. Press and hold the Source button again (or a 9-second timeout) returns the keypad to regular operation.

The first option name (Bass) appears on the display to indicate it is ready for adjustment. Subsequent presses of the Source button toggle through Treble, Loudness, Balance, and Turn On Volume.

Once an option is selected, the Volume Up/Down buttons are used to adjust settings. The volume indicator bars indicate the option setting, along with setting numbers displayed on the LCD.

Options and Settings

1. Bass: -10 < Bass:Flat > +10

2. Treb (Treble): -10 < Treble:Flat > +10

3. Loud (Loudness) (more bass, fuller sound): On or Off (When Loudness is turned on, the blue LED lights solid)

4. Bal (Balance): Left 10 < Center > Right 10

5. OnVol (Turn on Volume) (default room volume level): 0 to 100 (in steps of 2)

INSTALLER
GETTING STARTED

Unpacking the System Components

• Keep the original carton and packing materials for future shipment or storage.

• Check for any visible signs of damage. If you encounter any concealed damage, consult your Russound dealer before proceeding to install the unit.

• Retain the sales receipt as it establishes the duration of the limited warranty and provides information for insurance purposes.

CAS44 System Components:

• 1 (one) CAS44 Controller/Amplifier

• 4 (four) KP4 or KPL System Control Keypads

• 1 (one) CAS-RC Learning/Preprogrammed Remote Control

• 2 (two) 1584.1 Dual Micro Emitters

• 1 (one) IR Link Cable

Tools needed for installation:

- Drill with a 1/2" x 6" drill bit
- Keyhole saw
- Flat head screwdriver (medium size)
- Phillips Screwdriver (cordless recommended)
- 110 punchdown tool (included)
- Modular RJ-45 crimper and connectors
- Pair of diagonal cutters or wire strippers
- Stud finder
- Steel wire fish tape
- Cable staples
- Single-gang electrical work boxes

System Installation Considerations

There are several factors to consider before installing the Russound CAS44 system:

• What are the intended listening zones?

• What system options and accessories might be required for features such as local sources, etc.?

• From where in each zone will the user prefer to control the system? Where will the keypads be located? Where will the speakers be located?

• Where will the source equipment be located? The CAS44 must have proper ventilation above and below for air circulation and heat dissipation. A rack-mount location may require fans and vents.

Connection Tips

• It is recommended that the CAS44 and the source equipment be plugged into a dedicated 20-amp circuit with an isolated ground. A power line conditioner can reduce interference problems caused by noise found in some electrical systems.

• Disconnect all live power cords before making connections to the controller.

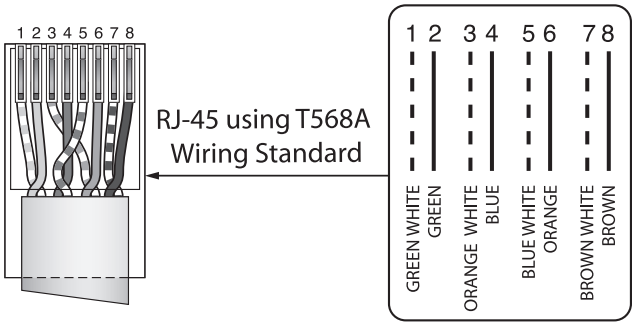
• Verify that all connections and polarity are correct.

• Keep all power cords away from all signal cables to prevent humming from induced noise.

• Choose reliable signal cables/patch cords.

• Label all wires with room location at both ends of the wire.

RJ-45 Connections
The CAT-5 T568A wiring standard shown on the right is used for the RJ-45 terminations.



Keypad Wiring
For the KP4 or KPL keypad, the following connections are used to terminate the CAT-5 wire to the 110 punchdown on the keypad:

CAT-5 WIRE COLOR	TYPE
Brown	+12V
Brown/White	+12V
Green	Ground
Green/White	Status In
Orange	Ground
Orange/White	IR Out
Blue	COM A
Blue/White	COM B

- To determine the amount of CAT-5 wire required for the system installation, first decide how many keypads will be used, then determine the distance between each intended keypad location to the planned CAS44 location. The maximum recommended wire run length is 250 feet for each KP4 or KPL keypad.
- Make sure that the entire wire path between keypads and CAS44 is clear and not obstructed by a floor ceiling joist, or masonry wall which can't be drilled through.
- Confirm ahead of time that you can drill an outlet hole easily and in an unobtrusive spot to connect wires with the CAS44.
- Label wires with keypad and room location. This simplifies CAS44 hook-up once the keypads and speakers are installed.

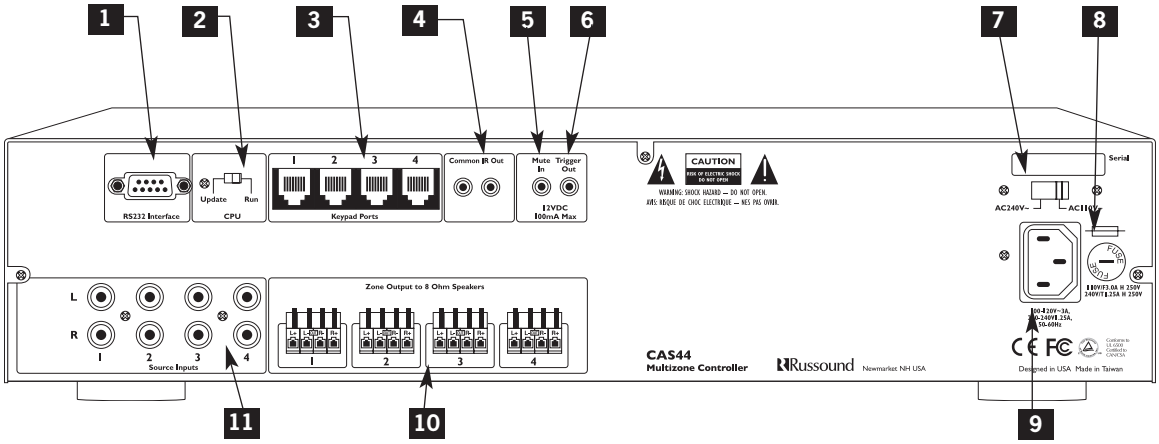
Speaker Wiring
Standard 16-gauge 4-conductor stranded speaker wire can be run up to to 125 feet; 14-gauge wire can be run up to 250 feet.

When running wire, pay particular attention to the following areas:

- Avoid locations concealing pipes, heating ducts and AC wiring in the general vicinity.
- Avoid running wires close to house electrical wiring for any distance. If you have to run them parallel, make sure to space the wires at least two feet from the AC line.

INSTALLER
COMPONENT GUIDE

CAS44 Rear Panel



1 RS-232 INTERFACE - The RS-232 Interface allows the zones to be controlled by PC or other devices that have an RS-232 Interface. The RS-232 Interface also allows for firmware updates.

2 CPU UPDATE SWITCH - For firmware updates.

3 KEYPAD PORTS - One KP4/KPL Keypad Port for each of the four CAS44 Zones.

4 COMMON IR OUTPUT - Two Output jacks pass all IR signals from all keypads.

5 MUTE 12VDC TRIGGER IN - Applying 12VDC to the Mute 12VDC Trigger In jack will mute audio for assigned CAS44 Zones.

6 12VDC TRIGGER OUT - 12VDC 100ma Trigger Out turns on when any zone is on. Turns off five minutes after the last zone is turned off.

7 AC-240V/AC-110V Switch - Switches A/C input voltage between 2400VAC and 110VAC.

8 FUSE HOLDER - Holds a replaceable fuse for A/C input connection
110VAC operation - F3A H 250V, 240VAC operation; T1.25A H 250V

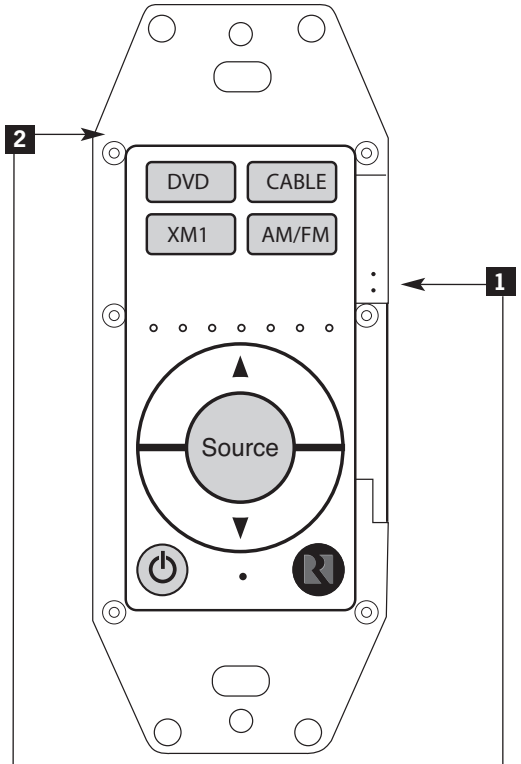
9 AC 120/240 INPUT - Grounded 3-terminal plug detachable power cord connection.

10 ZONE OUTPUTS - Connect 8 Ohm speakers for each zone with detachable color-coded modular snap connectors.

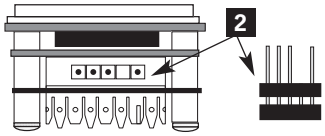
11 SOURCE INPUTS - Four sets of Audio Line Level input connections for CAS44 source components.

Keypad Front Panel

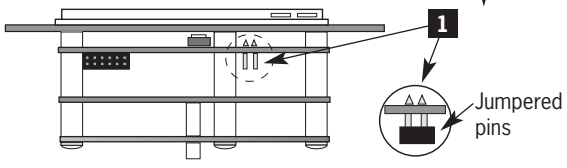
The update jumper for the KP4 (and KPL) is located on the right side of the keypad when facing front. This is covered when a trim plate is installed. ***Note:*** *The update pins on the KP4 are accessed from the side when the keypad is not installed.*



KP4 Front View



KP4 Top View



KP4 Side View

1 OS UPDATE/RUN JUMPER -The pins are jumpered when performing a firmware update on the keypad, and removed during normal operation.

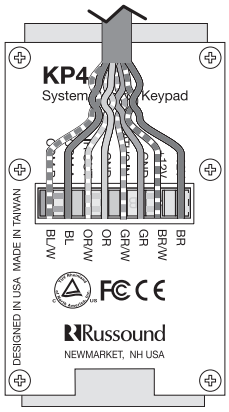
2 OS UPDATE PORT - Used to update the KP4 and KPL keypad operating system firmware. If an update is released, it will be available online through the Document Center on www.russound.com. Look in the "Firmware and Downloads" section under Multi-Zone product type. The Advanced Programming Cable is available from Russound, Part #2500-521065.

INSTALLER
COMPONENT GUIDE

Keypad Rear Panel and Installation

CAT-5 to KP4/KPL Connection

The KP4/KPL keypad uses a 110-punchdown terminal on the back panel to provide simple installation and a strong connection for CAT-5 cable's eight conductors. Punchdown terminals require the use of a punchdown tool. Attach the CAT-5 cable to the 110-punchdown terminal on the KP4 keypad as shown, matching the conductor colors to the connection color guide. The keypad will not operate properly if the terminations deviate from the required connection order. Take care when using an impact 110 punchdown tool, as this may overspread the contact points. Use of the impact tool may propel stray bits of wire and jacket into the keypad's chassis and possibly cause a short in the circuitry. Gently shake or blow air through the keypad chassis to remove stray wire before the keypad is installed into the junction box.



Source Label Installation

Note: Source labels must be inserted prior to installing the trim plate on the keypad.

1. Determine the system's source names and numbers (e.g., CD, Source 1).

2. Select the corresponding source name label from the included label sheets. Left-side labels are used for sources 1, 3 and 5; right-side labels are used for sources 2, 4 and 6.

3. Slide the label into the window slot until the source name is centered in the window.

Russound KP6/KP4 Source Labels

CD 1	CD	SERVER 1	CABLE
CD 2	DVD	SERVER 2	VCR
AM/FM	TAPE	SERVER 3	DVR
AM/FM 1	SAT	iPod	XM 2
AM/FM 2	XM 1	RADIO	SIRIUS

Keypad Installation

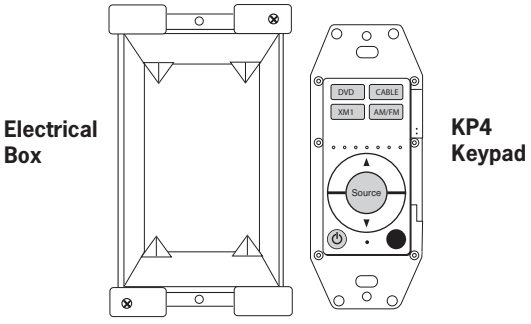
1. Ensure it is possible to route the wire to the location you have chosen.

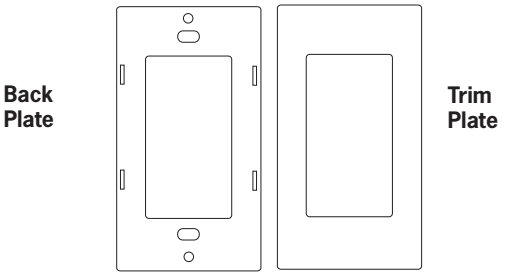
2. To install a single-gang keypad, you will need to use a UL/CSA approved plastic single-gang (18 ci) electrical box.

3. Route CAT-5 wire to the electrical box from the CA system controller.

4. Use a 110 punchdown tool to connect each wire to its corresponding color labeled on the punchdown terminal.

5. Mount the keypad in the electrical box. For the KP4 keypad, insert the source name labels in the appropriate slots before attaching the back plate and trim plate.





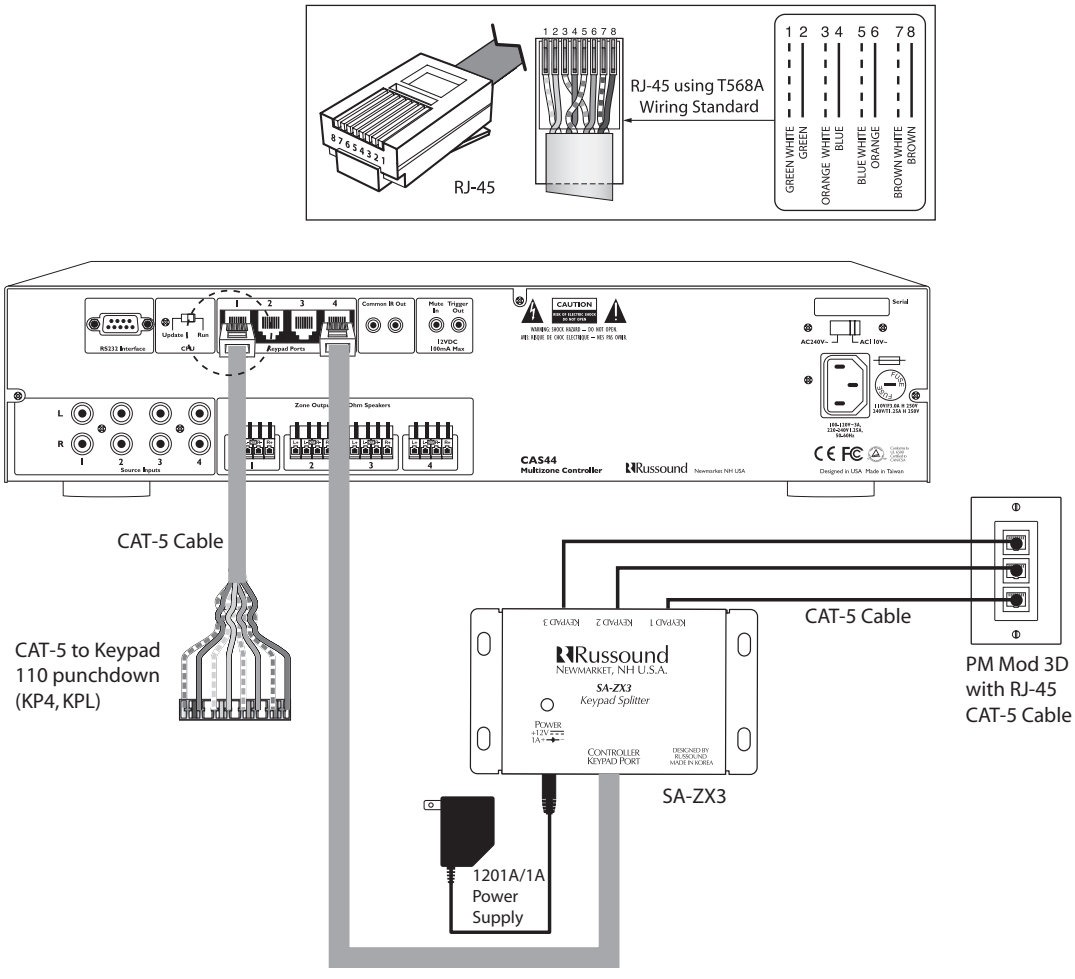
Keypad Port Connection

The Keypad Ports are located on the back of the CAS44 in the top left of center. Connections at the Keypad Ports are made with RJ45 connectors using T568A CAT-5 wire configuration.

For a clean installation when wiring from a Keypad Port, use an RJ45 CAT-5 patch cable to connect from the keypad port to an RJ45 wall plate (optional). Using the same RJ45 T568A CAT-5 wiring configuration, use CAT-5 from the RJ45 wall plate to the keypad.

If using more than one keypad in a zone, use an SA-ZX3 System Keypad Splitter (optional). The SA-ZX3 supports up to three keypads per zone and connects directly to the Keypad Port for that zone. The CAT-5 for the keypads is run to a wall plate, with RJ45 CAT-5 patch cables between the wall plate and the SA-ZX3. Always use the RJ45 T568A CAT-5 wire configuration when connecting keypads.

RJ-45 CAT-5 Wiring Scheme

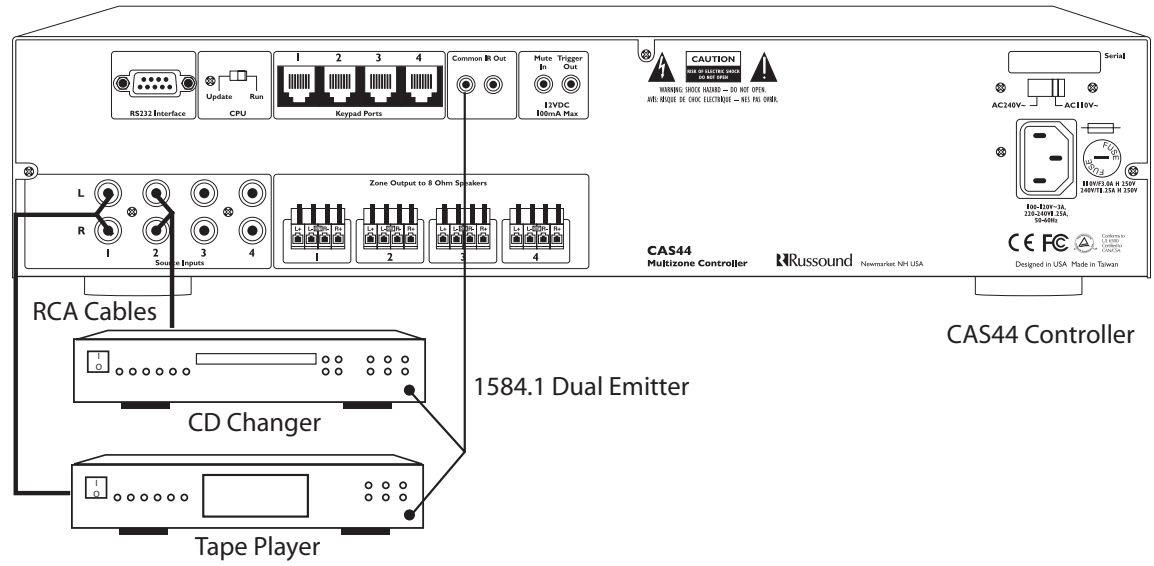


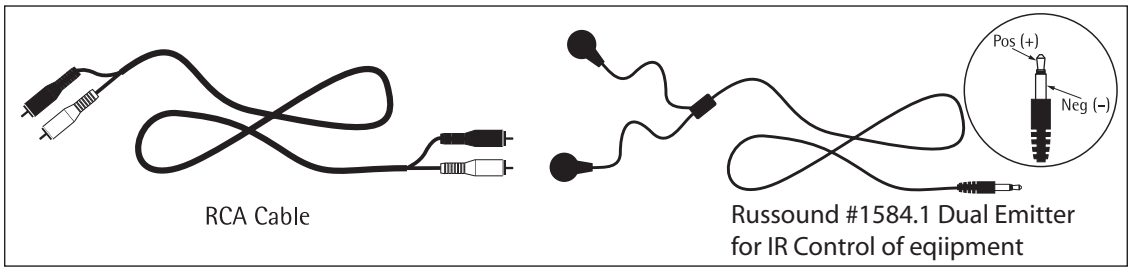
INSTALLER
MAKING CONNECTIONS

Source Audio and IR Connections

Source Audio Connections
The CAS44 supports up to four audio sources. The Source Inputs are located on the back panel. Connect each source using quality RCA signal cables. Connect the Left and Right Audio outputs from each source to the corresponding inputs on the CAS44 controller. Label each cable with the name of the selected source and the Source Audio input number located on the CAS44.

Common IR Connections
The Common IR jacks on the rear of the CAS44 allows control of the source equipment with IR signals received through the keypad. The connection for the COM IR jack is made using an IR emitter with a 1/8" plug. Two Russound 1584.1 dual IR emitter are provided, or use an IR connecting block such as Russsound 857 which allows multiple units to be controlled through the Common IR Port.





RNET Source Audio and IR Input Connections

RNET Source Audio Connections

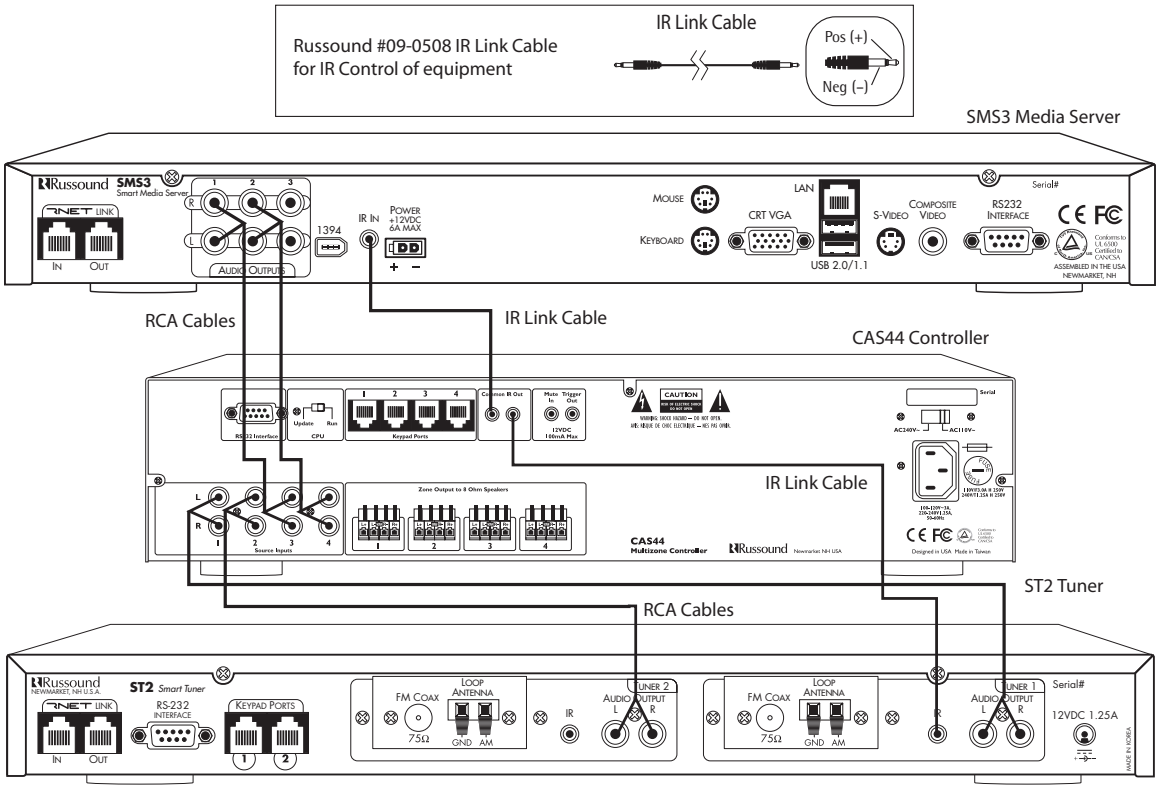
The CAS44 supports audio connections to Russound RNET components such as the ST2 Tuner and the SMS3 Media Server.

Using quality RCA signal cables, connect the Left and Right Audio outputs from each RNET source to the corresponding inputs on the CAS44 controller. Label each cable with the name of the selected source and the Source Audio input number located on the CAS44.

Common IR Connections

The CAS44 uses two Common IR jacks to allow control of the source equipment with IR signals received through the keypad. The connection for the Common IR Out jack is made using an IR link cable with a 1/8" plug.

An IR Link Cable (Russound P/N 09-0508) is used to connect the IR In of the source to the Common IR Out jack on the CAS44. The ST2S Tuner can be controlled by infrared commands received through either of the two IR connections on the rear panel. These components can be controlled through the keypads with the CAS-RC remote control, or with the source remotes (ST2-RC, SMS3-RC). When used with the KPL keypad, there will be no RNET source information sent to the keypad display.



INSTALLER
MAKING CONNECTIONS

Speaker Connections

The speakers are connected to the CAS44 using modular snap connectors. Each of these color-coded connectors is designated for the speaker set of a particular amplified zone. To avoid confusion, connect one zone speaker set at a time starting with Zone 1, taking care to keep zone and speaker wire identities straight. Note: An 8 Ohm minimum speaker is required for each amplified output.

1. Pull the speaker wire conductors apart so they're separated for the first two inches from their ends.

2. Using a wire stripper, remove 1/4 inch of insulation from each conductor. Twist the strands in each conductor into tight spirals.

3. Remove the modular four-color connector for Zone 1. The color code is as follows:

WHITE -- L+ (left channel positive)

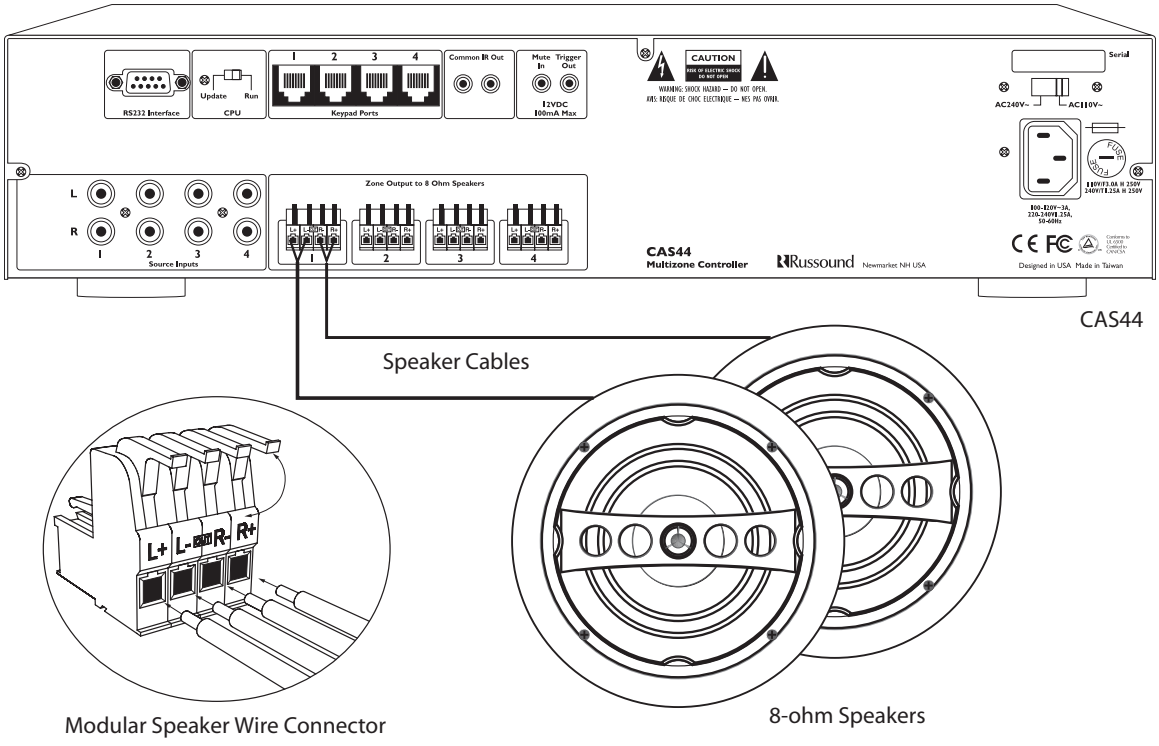
GREEN -- L- (left channel negative)

BLACK -- R- (right channel negative)

RED -- R+ (right channel positive)

Lift the black lever for each connection until it locks open and insert the proper speaker wire, matching channel and polarity for all four wires. Snap the lever down. Insert the modular connector into its designated output on the back of the CAS44.

4. Complete the same steps for the remaining zones. Label each set of speaker wires with the zone and location.



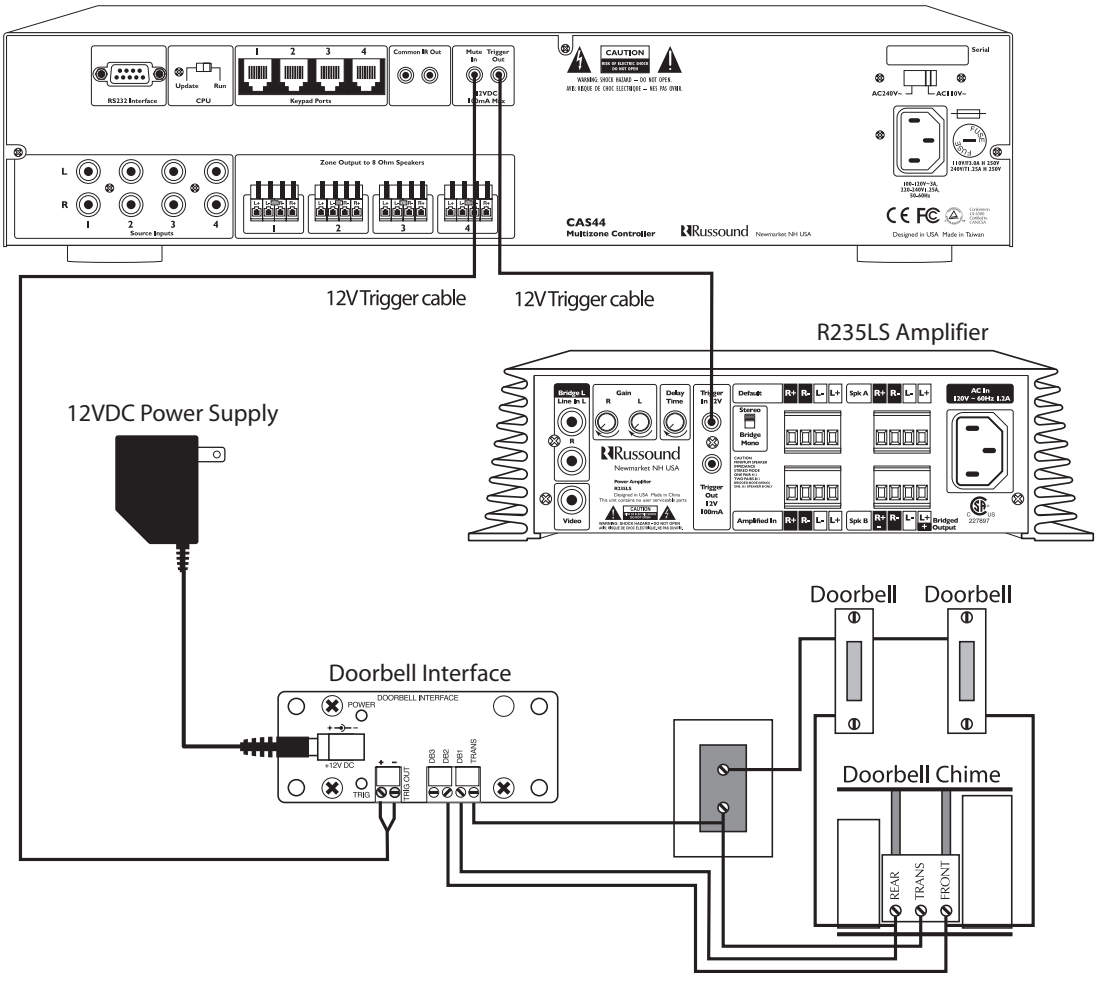
12VDC Mute Trigger In/Trigger Out

12VDC Mute Trigger In

When 12VDC is applied to the Mute In, the system will fully mute all zones in the system. The connections for the trigger are made using a two-conductor cable with 1/8" male mini-plug jacks. The tip is positive (+) and sleeve is negative (-). This allows for the connection of an external paging or muting device. **Note:** The CAS44 will not accept a paging audio input; however, if used with an independent paging system with 12V trigger out, that can be used to trigger the mute.

12VDC System Trigger Out

Trigger Out 12VDC output is used for triggering an external amplifier or other component. The connections for the output are made using a two-conductor cable with 1/8" male mini-plug jacks at each end. The tip is positive (+) and sleeve is negative (-). The System Trigger Out supplies 12VDC when the first keypad is turned on. The 12 VDC is removed 5 minutes after the last keypad is turned off.



INSTALLER
MAKING CONNECTIONS

Linking Two CAS44 Controllers

Linking Two Controllers

Two CAS44 controllers can be linked together for a system that supports eight zones and four sources. This setup requires two dual emitters, one IR link cable and eight keypads (KP4 or KPL).

Establish four zones for the first controller and four zones for the second controller (keypads and speakers).

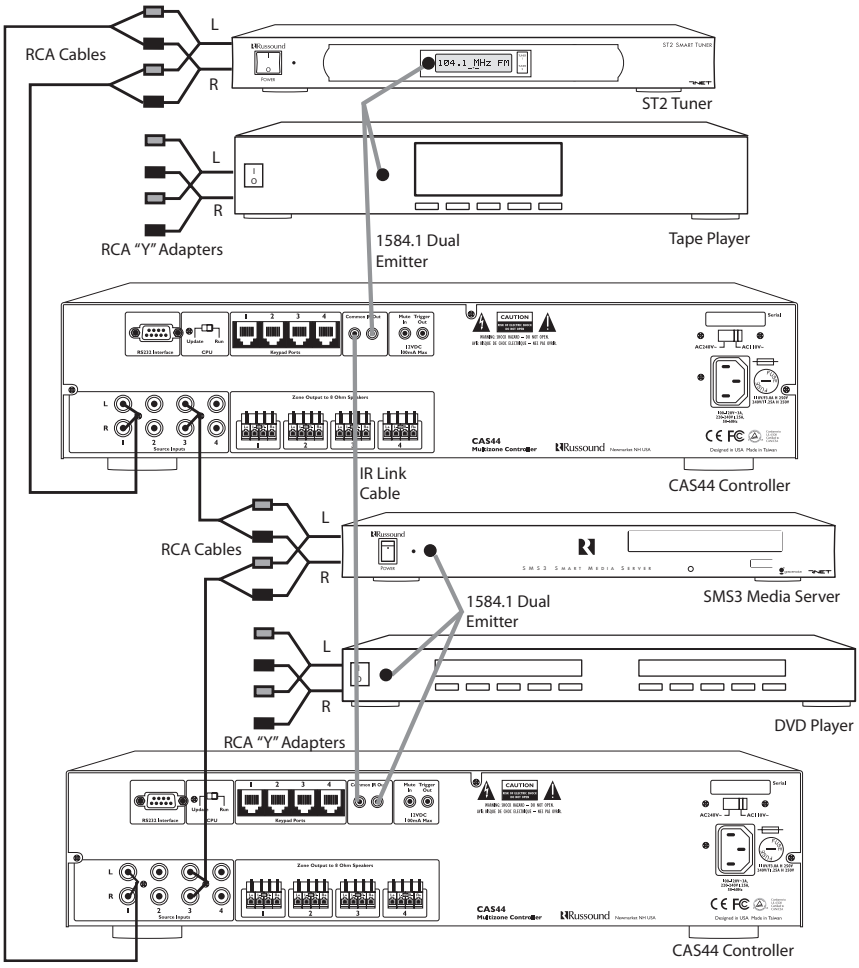
Connect the audio from the sources (up to four) to the two controllers. The audio must be split using RCA "Y" adapters or line level distribution amplifiers to connect to both controllers.

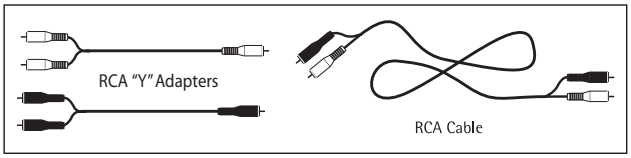
Connect one end of the IR link cable to the first controller's Common IR Out jack and the cable's other end to the second controller's Common IR Out jack.

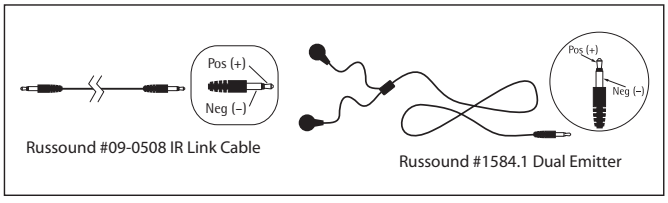
Connect a dual emitter to each of the remaining Common IR Out jacks on both controllers. Affix these emitters to the sources.

Refer to the diagram at right for connections.

Linking Two CAS44 Controllers







INSTALLER
MAKING CONNECTIONS

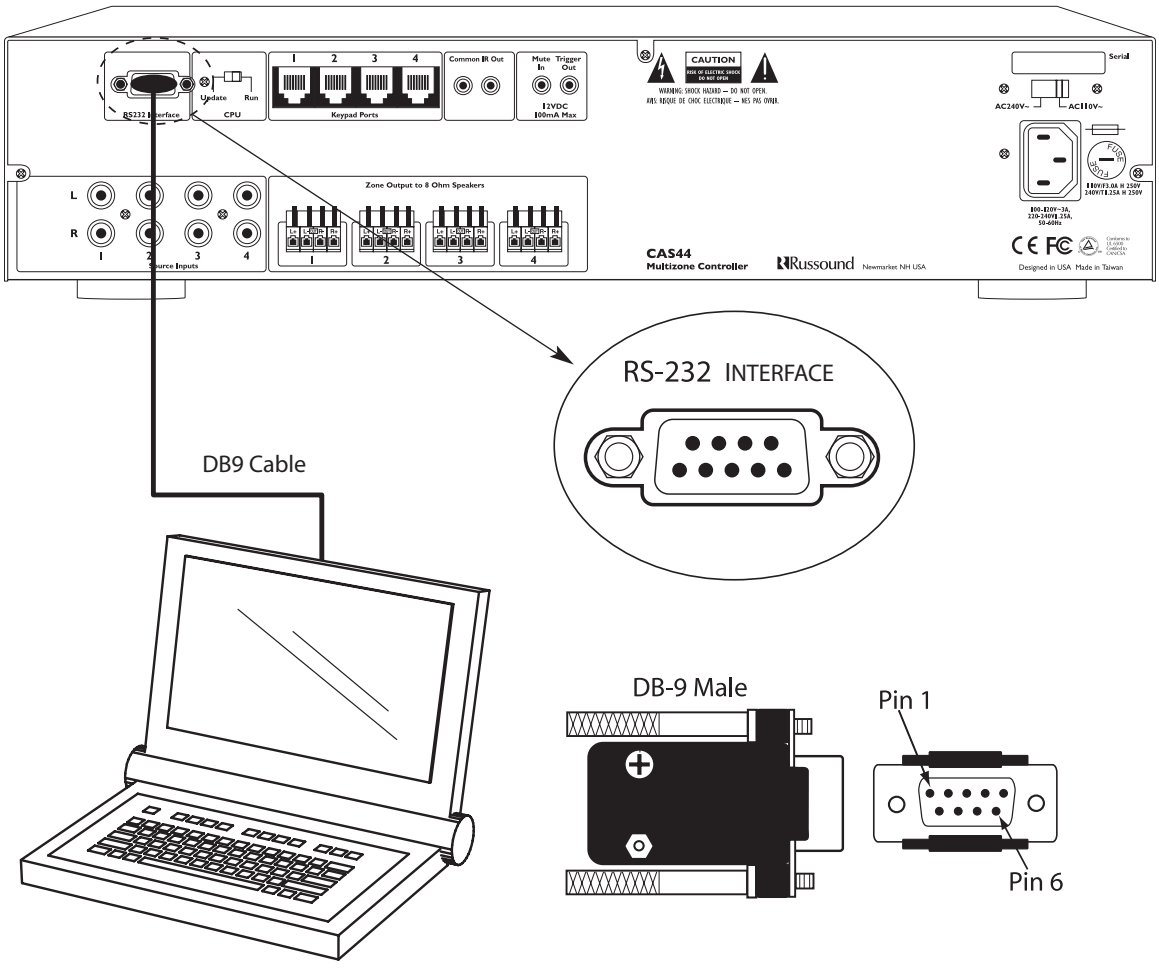
RS-232 Interface

The CAS44 supports RS-232 communication with various third party automation systems or PC for programming and firmware updates of the controller. The RS-232 com port is located on the back of the CAS44 and uses a DB-9 cable connection.

For firmware updates, be sure the CPU Update switch next to the the RS232 interface is set in the “Run” position.

The current firmware version of the CAS44 is found using the KPL keypad’s Setup menu (refer to the Reference section of this manual).

For RS-232 protocol, firmware updates and the backup PC application, see the Document Center at *www.russound.com.* Look for the Technical Documents under Multi-source/Multi-room products.



INSTALLER
INITIAL HARDWARE INSTALL TEST

It's important to conduct an initial test to determine that the hardware components are working properly.

1. Connect the speaker wires from Zone #1 to the CAS44 Zone #1 speaker output connectors.

2. Connect a keypad (KP4, KPL) to Keypad Port #1 on the rear of the CAS44.

3. Connect a source to the Source #1 Input on the CAS44 using RCA Audio patch cables.

4. Plug a 1584.1 dual IR emitter into one of the Common IR Jacks and adhere one emitter end to the source equipment's IR window.

5. Plug in the main power cords for the CAS44 and the source.

6. Turn on the main power switch on the CAS44 and the source.

7. Manually command the source to provide audio or use the source remote control.

8. Press the power button on the KP4 or KPL keypad and select Source #1.

9. To be sure of proper placement of the IR emitter on the source component, aim the source remote control at the keypad for Source #1 and try to control the source. Adjust the emitter over the source's IR receiver if necessary.

Congratulations – you should now hear the source through the speakers in Zone #1.

If there is no sound, follow these diagnostic steps:

1. Check the source to see that it is operating properly.

2. Check the RCA Audio cable connections from the source to the Source #1 Input on the CAS44.

3. Check the speaker connections and verify that they are correct and are connected to the Zone #1 speaker outputs.

4. Check to see that the keypad is connected to the Zone #1 Keypad Port and verify the CAT-5 is properly terminated at both ends.

If none of these steps produce successful results, call Russound Tech Support for further assistance.

INSTALLER
SOURCE SETUP WITH CAS-RC REMOTE CONTROL

CAS-RC Remote Control

The CAS44 controller does not require programming for the controller or for source setup. **All source setup and control is contained in the CAS-RC remote control.**

The CAS-RC Remote Control is designed for use with the Russound CAS44 controller amplifier and system keypads (KP4 and KPL). It is designed to operate source devices and the audio system keypad, and is preprogrammed to control Russound components ST2 Tuner and SMS3 Media Server. The CAS-RC controls up to four devices.

Features and Functions

Note: S1, S2, S3, S4, Vol +/-, Mute and Power are system commands and are the same for any source. All other buttons are dependent upon the device code associated with the source and may vary from device to device.

The following Key Charts provide a general description of button functions.

Key Charts

Select a device. These keys are preset for Russound devices, but can be re-programmed (see "Programming a Device").
S1= Russound Tuner 1
S2= Russound Tuner 2
S3= Russound SMS3 Stream 1
S4= Russound SMS3 Stream 2

Turn the selected zone on or off.

Program sequences.

Select next/previous.
Select the next/previous chapter on some models of DVD players.
Press LAST to recall the last-viewed channel.

Raise or lower the sound level.
Press MUTE to turn the sound off or on.

Move the cursor in the menu screens.

Press OK to choose the high-lighted menu option.
Performs "Enter" function for devices.

Press Enter to choose the high-lighted menu option.
Performs "OK" function for devices.

Skip backward, rewind, fast forward, skip forward, stop pause, or play tracks on disc.

Use Page Up/Down with cable or satellite boxes.
Note: May have to learn in these functions.

View the current channel and program information.

Display the menu for the selected device.

Exit the selected device's menu, guide, or program without making a menu selection.

Display the program guide for the selected device.

Change inputs on selected device.
To change inputs on CAS44 use S1 - S4 buttons.

Press LAST once to recall the last channel and to page back one screen in the main menu.

Directly enter channels (e.g., 09 or 31). Press OK to send channel number entries on some TV models.

Programming a Device

Note: S1, S2, S3, S4, Vol +/-, Mute and Power are system commands and are the same for any source. All other buttons are dependent upon the device code associated with the source.

Before proceeding, find the codes for the devices you want to program in, under "Manufacturer's Codes" in this manual. To control Universal TV, VCR or DVD, Cable or Satellite Receivers, Amplifier or Tuner, and Auxiliary devices, follow these steps.

1. Turn on the device (e.g., DVD player) and if needed, load media.

2. Press a device key (S1, S2, S3 or S4).

3. Press and hold SET until the red LED blinks twice, then release.

4. Enter the first five-digit code for your device.The LED blinks once as each digit is entered. If the code is valid, the LED blinks twice.

Note: If the LED does not blink twice, repeat steps 2 to 4 and try entering the code again.

5. Aim the remote at the device and press a function button. The

device should in turn perform the requested function. If it does not, repeat steps
3-5, trying each code for your brand until you find a code that works. If you cannot find a code that works see “Searching for Your Code” in this manual.

6. Repeat steps 1-5 for the other devices you want to control. For future reference, write down each working device code.

Searching for your Code

Note: S1, S2, S3, S4, Vol +/-, Mute and Power are the same for any source. All other buttons are dependent upon the device code associated with the source.

If your device does not respond to the remote after trying all codes listed for your brand, or if your brand is not listed, try searching for your code:

1. Press a device key once.

2. Press and hold SET until the red LED blinks twice, then release.

3. Enter 9-9-1, then the device group number (see below). The LED blinks twice.

0	Cable (Cable Converters, Video Accessories, Satellite Receivers)
1	TV (TVs)
2	VCR (VCRs, DVD players)
3	Audio (Audio Amplifiers, Audio Amp/Tuners, CD players)

4. Aim the remote at the device and press POWER. The remote sends IR codes from its library to the selected device, starting with the most popular code first. If the device responds, go to step 6.

5. If the device does not respond, press CH+. the remote will try the next code. Continue until the device responds. Press CH- to try the previous code.

6. Press SET to lock in code. To search for other device codes, repeat steps 1-5.

Checking the Codes

If you have set up the remote using the procedure in “Searching for Your Code,” you may need to find out which five-digit code is operating your equipment. For example, to find out which code is assigned to your TV:

1. Press the S# key to which the TV is assigned.

2. Press and hold SET until the red LED blinks twice, then release.

3. Enter 9 9 0. The LED blinks twice.

4. To view the code’s first digit, press 1. Count the LED blinks (e.g., three blinks =3), and enter the number in the appropriate device list in step 6 of “Programming a Device.” If a code digit is 0, the LED does not blink.

5. Repeat step 4 for the remaining digits, using 2 for the second digit, and so on.

6. To check for other device codes, repeat steps 1-5, using the appropriate S# key.

Using Learning

The CAS-RC includes a Learning feature so you can add functions that are unique to your home entertainment devices (e.g., VCR Tracking Up or Down). The following precautions apply.

• The original remote controls must be in working order for learning to work properly.

• Learned keys are mode specific, so each one can store a unique function for each mode.

• Do not use the following keys for learning: Device Keys, SET, BACK, or Record.

• Learning capacity is approximately 40 to 100 keys, depending on the code being learned.

• Certain device codes are not learnable including multi-frequency types, some high frequency ones, and other unusual formats.

• For optimum learning, avoid high levels of ambient light such as natural sunlight or energy-efficient fluorescent lights.

• Have the original remote controls handy before programming learning.

Programming a learned key

Note: If more than 15 seconds pass between key presses, the remote exits programming.

1. Press and hold SET until LED flashes twice.

2. Press 9 7 5.

3. Press a device key once (e.g., S1, S2, S3, S4) to assign a mode for learning.

4. Place the CAS-RC head-to-head (about 2” apart) from your original remote control. Also locate the key (on original remote control) that will serve as the teaching function.

5. On the CAS-RC, press a key where the learned function will be stored.

6. On the original remote, press and hold the the key to be learned. The CAS-RC LED will turn off.Continue holding the key on the original remote until the CAS-RC LED blinks twice.

Note: If the LED displays one long blink, a learning error has occurred. Try repeating this step again until a successful capture occurs. If the function is still not captured, press and hold SET to exit programming. Review the learning precautions listed above, or the Troubleshooting tips below, before beginning again at step 1.

7. To program another key for the same source, repeat steps 5-6. To program another device, repeat steps 1-6. Press and hold SET to exit programming.

Deleting a single learning key

1. Select a source.

2. Press and hold SET until the LED flashed twice.

NOTE: If more than 15 seconds passes between key presses, the remote exits programming.

3. Press 9 7 6.

4. Press the key (twice) containing the learned function to be deleted. The remote blinks twice.

5. Repeat steps 2-4 for another key on the same source, or press and hold SET to exit programming.

Deleting all learned keys in a specific mode

1. Press and hold SET until the LED blinks twice.

Note: if more than 15 seconds pass between key presses, the remote exits programming.

2. Press 9 7 6.

3. Press a device key twice (S1, S2, S3, S4) to delete all the learned keys for that mode. The LED blinks twice.

4. Repeat steps 1-3 for another set of keys for a device, or press and hold SET to exit programming.

INSTALLER
SOURCE SETUP WITH CAS-RC REMOTE CONTROL
MANUFACTURER IR DEVICE CODES

MANUFACTURER'S CODES

Setup Codes for Audio Amplifiers

Accuphase	30382
Acurus	30765
Adcom	31100, 30577
Aiwa	30406
AudioSource	30011
Bel Canto Design	31583
Bose	30674
Carver	30269
Classe	31461, 31462
Curtis Mathes	30300
Denon	30160
Durabrand	31561
GE	30078
Harman/Kardon	30892
JVC	30331
Kenwood	30356
Korsun	31483
Left Coast	30892
Lenoxx	31561
Linn	30269
Logitech	31408
Luxman	30165
Magnavox	30269
Marantz	30892, 30321, 30269
Mark Levinson	31483
Nakamichi	30321
NEC	30264
Optimus	30395, 30300
Panasonic	30521, 30308
Parasound	30246
Philips	30892, 30269
Pioneer	30013, 30300
Polk Audio	30892, 30269
PS Audio	31523
RCA	30300
Realistic	30395
Sansui	30321
Shure	30264
Sony	30689, 30220, 30815
Soundesign	30078, 30211
Technics	30521, 30308
Victor	30331
Wards	30078, 30211, 30013
Yamaha	30354, 30143, 30133, 30504
YBA	31502

Setup Codes for Audio Amp/Tuners

ADC	30531
Adcom	31616, 30616, 31617
Aiwa	31405, 30158, 30189, 31243, 31089, 31388, 30121, 30405, 31321, 31641, 31347
Akai	30224, 30076, 31512, 31255
Alco	31390
Amphion Media Works	31615, 31563
AMW	31563, 31615
Anam	31609, 31074, 30281
Apex Digital	31430, 31257
Arcam	31120
Audiophase	31387
Audiotronic	31189
Audiovox	31390, 31627
AVLight	30158
Bel Canto Design	31584
Bose	31229, 31253, 30639
Brix	31602
Cambridge Soundworks	31477, 31370
Capetronic	30531
Carver	31189, 30189, 30042, 31089, 30008, 30360
Casio	30195
Clarinette	30195
Classic	31352
Coby	31513, 31389, 31263
Compaq	31136
Criterion	31420
Curtis	31596
Curtis Mathes	30080
Daewoo	31250
Dell	31383
Denon	31360, 30004, 31104, 30771, 31311, 30273, 31142, 30301
Dynamic Bass	30360
Emerson	30424, 30255
Fisher	31409, 30360, 30219, 31801, 30042
Fonmix	31360
Fosgate	31487
Garrard	30424, 30281, 30463, 30146, 30440
Gateway	31517, 31567
GE	31379
Glory Horse	31263
Go Video	31532
GoldStar	30281
GPX	31299
Hafler	30146
Harman/Kardon	30110, 30189, 30891
Hewlett Packard	31181
Hitachi	31801, 31273
Initial	31426
Inkel	30027, 30062, 30502, 30491
Integra	30135, 31298
JBL	30110, 31306, 30281
JVC	30074, 31282, 31263, 31495, 31374
Kansai	30440
Kenwood	31313, 31570, 31569, 30027, 31051, 30077, 30313, 31027, 30042, 30239, 30569, 31052, 30186, 30314
KLH	31412, 31390, 31428
Koss	30424, 30255, 31366
Lasonic	31798, 31510
Lenoxx	31437
Lexicon	31076
Linn	30189
Liquid Video	31497
Lloyd's	30195
LXI	30181
Magnavox	31189, 31269, 30189, 30128, 30391, 30195, 31089, 31514, 30531
Marantz	31189, 31269, 30039, 30189, 31089, 31289, 30200, 30128
MCS	30039, 30346
Memorex	31596
Mitsubishi	31393
Modulaire	30195
Musicmagic	31089
NAD	30320
Nakamichi	30347, 30097, 31555
NEC	30235
Norcent	31389
Onkyo	30135, 31298, 30842, 30380, 31531
Optimus	31023, 30801, 31074, 30080, 30186, 30531, 30797, 30042, 30181, 30440, 30738, 30849, 30177, 30219, 30670
Oritron	31497, 31366
Panasonic	31518, 30039, 31548, 31764, 30518, 31350, 31763, 30367, 31316, 31509, 31633, 30309, 31288, 31363
Penney	30195
Philco	31390
Philips	31189, 31269, 30189, 31365, 31089, 31266, 31283, 30891, 31368, 30391, 31120, 31268
Pioneer	31023, 30150, 30630, 31184, 30080, 30531, 31084, 31384, 30244,31343
Polaroid	31508
Polk Audio	30189, 31289
Proscan	31254
Qisheng	31609, 31390
Quasar	30039
RadioShack	31263
RCA	31023, 31609, 31254, 30346, 30531, 31154, 31511, 30080, 30530, 31074, 31390, 30054, 30360
Realistic	30195, 30181, 30163
Regent	31437
Rio	31869, 31383
Russound Tuner1	**31493**
Russound Tuner2	**31494**
Saba	31519
Samsung	31500, 31295
Sansui	30189, 30346, 30193, 31089
Sanyo	30801, 30360, 31469, 30219, 31251
Scott	30163, 30322
Sharp	31286, 30186, 31386, 31361
Sharper Image	31545, 31556, 30797, 31409, 31416, 31549, 31385, 31411, 31546, 31723, 31263, 31410
Sherwood	30491, 31423, 30062, 31077, 30502, 31653
Shinco	31390
Shinsonic	31426
Silsonic	30176, 31426
Sonic	30281
Sonic Blue	31383, 31869, 31532
Sony	31058, 31441, 31258, 31759, 30158, 31442, 31529, 31758, 31371, 31503, 31042, 31658, 31158, 31858, 31367, 31406, 31458, 30168, 31558, 31131, 31349, 31382
Soundesign	30670
Stereophonics	31023
Sunfire	31313, 30314, 30313, 31052
Tae Kwang	30440
Teac	30163, 31267, 31074, 31528, 30463, 31390
Technics	31308, 31518, 30039, 30518, 30309, 31309, 30208
Techwood	30281
Thorens	31189
Venturer	31390, 30849
Victor	30074
Wards	30158, 30189, 30080, 30054
Yamaha	30176, 30081, 31176, 31375, 30186, 31331, 31276
Yorx	30195
Zenith	31293, 30857, 30281, 31869

Setup Codes for Cable Converters

ABC	00003, 00008, 00014, 00001, 00007, 00013, 00011, 00017
Allegro	00315, 00153
Americast	00899

INSTALLER
SOURCE SETUP WITH CAS-RC REMOTE CONTROL
MANUFACTURER IR DEVICE CODES

Antronix	00207, 00022
Archer	00797, 00207, 00153, 00022
Belcor	00056
Bell & Howell	00014
Bell South	00899
Cable Star	00056
Cabletenna	00022
Cableview	00022
Century	00153
Citizen	00315, 00153
Clearmaster	00883
ClearMax	00883
Colour Voice	00025, 00031
Comtronics	00040
Contec	00019
Coolmax	00883
Daeryung	01877, 00877, 00477, 00008
Digi	00637
Director	00476
Dumont	00637
Eastern	00002
Emerson	00797
Everquest	00040, 00015
Focus	00400
Funai	00019
Garrard	00153
GC Electronics	00207, 00056
Gehua	00476
Gemini	00797, 00015
General Instrument	00476, 00810, 00276, 00003, 00014, 00011, 00015
Global	01327
GMI	00015, 00797
GoldStar	00144, 00040
Goodmind	00797
Hamlin	00009, 00273, 00034, 00020, 00259
Hitachi	00014, 00011
Hytex	00007
Jasco	00015, 00315, 00153
Jebsee	00400
Jerrold	00476, 00810, 00276, 00003, 00012, 00014, 00011, 00015
Leon	00015
LG	00144, 00040
Linsay	00440
Magnavox	00027
Memorex	00000
Motorola	00476, 00810, 00276, 01254, 01106, 01376
Movie Time	00156, 00063
MS	00015
MultiVision	00012
Novaplex	00618
NSC	00063, 00156
Oak	00019, 00007
Optimus	00021
Pace	01877, 00237
Panasonic	00000, 00008, 00107, 00040, 00021
Panther	00637
Paragon	00000
Philips	00317, 00027, 00025, 00153, 00013, 00031, 01305
Pioneer	01877, 00877, 00144, 00533, 01021
Popular Mechanics	00400
Pulsar	00000
Quasar	00000
RadioShack	00015, 00883, 00797, 00315
RCA	00021
Realistic	00207
Recoton	00400
Regal	00279, 00273, 00259, 00020
Regency	00002
Rembrandt	00011
Runco	00000
Samsung	00000, 00144, 00040
Scientific Atlanta	01877, 00877, 00477, 00008, 00017
Seam	00510
Signal	00040, 00015
Signature	00011
SL Marx	00040
Sony	01006
Sprucer	00021
Starcom	00003, 00014, 00015
Stargate	00015, 00797, 00040
Starquest	00015
Supercable	00276
Supermax	00883
Sylvania	00001
Tandy	00258
Teleview	00040
Texscan	00001
TFC	00310
Timeless	00040
Tocom	00012, 00013
Torx	00003
Toshiba	00000
Trans PX	00276, 00153, 00315
Tristar	00883
TS	00003
Tusa	00015
TV86	00063
Unika	00207, 00153, 00022
United Artists	00007
Universal	00153, 00056, 00207, 00022, 00191
V2	00883
Viewmaster	00883
Viewstar	00063, 00027, 00258
Vision	00883
Vortex View	00883
Zenith	00000, 00525, 00899
Zentek	00400

Setup Codes for CD Players (SMS3)

ADC	30018
Adcom	30155, 30234
Aiwa	30157, 30124, 30012
Akai	30156
Audio Alchemy	30194
Audio-Technica	30170
BSR	30245, 30194
Burmester	30420
California Audio Labs	30029, 30303
Carrera	30194
Carver	30157, 30437, 30179
Classic	31297
Crown	30122
DAK	30245
DBX	30254
Denon	30873, 30003
DKK	30000
DMX Electronics	30157
Dynamic Bass	30179
Emerson	30305, 30164, 30155, 30469
Fisher	30179, 30174, 31325, 30088, 30342
Garrard	30245, 30420, 30393, 30280, 30425
GE	30009
Gemini	30625
Genexxa	30032, 30305, 30164
GoldStar	30417
GPX	31296
Harman/Kardon	30157, 30173, 31202, 30426
Hitachi	30032, 30155
Inkel	30196, 30180, 30437
Integra	30101
JVC	30072, 31294, 30655
Kenwood	30681, 30826, 30626, 30028, 30037, 30036, 30190
KLH	31318
Kodak	30287
Korsun	31484
Koss	31317
Krell	30157
Kyocera	30018
LG	31208
Linn	30157
Luxman	30093
LXI	30305
Magnavox	30157, 30305
Marantz	30626, 30029, 30157, 30180
Mark Levinson	31484
McIntosh	30287
MCS	30029, 30043
Miro	30000
Mission	30157
MTC	30420, 30625
Nakamichi	30147
NEC	30043, 30234
Nikko	30174, 30170, 30164, 30625
NSM	30157
Onkyo	30868, 30101
Optimus	31063, 30000, 30032, 30037, 30342, 30437, 31075, 30145, 30194, 30305, 30426, 30087, 30179, 30280, 30420, 30468, 30175, 30196
Panasonic	30029, 30752, 30303
Parasound	30420, 30194
Philips	30626, 30157, 30287
Pioneer	31063, 31062, 30032, 30305, 30468, 31087
Polk Audio	30157
Proton	30157
QED	30157
Quad	30157
Quasar	30029
RadioShack	31075
RCA	31062, 30032, 30305, 30764, 30179, 30468, 30009, 30155, 30420, 30053
Realistic	30164, 30180, 30155, 30179, 30175, 30420
Rotel	30157, 30420
Russound Strm1	**31884**
Russound Strm2	**31885**
Russound Strm3	**31886**
SAE	30157
Sansui	30157, 30305, 30202
Sanyo	30179, 30087
SAST	30157
Scott	30305, 30164, 30155
Sears	30305
Sharp	30861, 30037, 30180
Sherwood	31067, 30196, 30180, 30426
Shure	30043
Silsonic	30888, 30036
Sonic Frontiers	30157
Sony	30490, 30000, 31364, 30185, 30605, 30100, 30604
Soundesign	30425, 30145

INSTALLER
SOURCE SETUP WITH CAS-RC REMOTE CONTROL
MANUFACTURER IR DEVICE CODES

STS	30018
Symphonic	30305
TAG McLaren	30157
Tascam	30420
TDK	31208
Teac	30393, 30180, 30174, 30420
Technics	30029, 30207, 30303
Tivoli Audio	31553
Vector Research	30194, 30417
Victor	30072
Wards	30157, 30053
Yamaha	30888, 30036, 30187, 30170, 31292
YBA	30625
Yorx	30461
Zonda	30157

Setup Codes for DVD Players

Adcom	21094
Advent	21016
Aiwa	20641, 21912
Akai	20899, 20770, 21975, 21089
Allegro	20869
Amphion Media Works	22016, 22001
AMW	20872, 22016, 22001, 21176
Anam	21913
Apex Digital	20672, 20717, 20797, 21020, 21100, 20796, 21004, 21061, 21937, 20794, 20830, 21056, 21915, 20755
Aspire Digital	21168
Audiologic	20736
Audiovox	21071, 21122, 21041, 21121, 21072
Axion	21071, 21072
B & K	20662, 20655
Bel Canto Design	21571
Blaupunkt	20717
Blue Parade	20571
Broksonic	20868, 20695
Cambridge Soundworks	21916
CAVS	21057
Changhong	20627, 21061
CineVision	20876, 20869
Classic	21917
Coby	20778, 21107, 21086, 21923, 20852, 21165
Criterion	22007
Curtis Mathes	21087
CyberHome	21023, 21129, 20816, 21117, 21024
Daewoo	20784, 20869, 20833, 21918, 21172, 20705
Denon	20490, 20634
Dual	21085, 21068
DVD2000	20521
Emerson	20591, 20675, 20821
Enterprise	20591
Fisher	20670, 21919
Funai	20675
Gateway	21077, 21073, 21158
GE	20522, 20815, 20717
Go Video	20744, 20869, 21099, 21970, 20715, 20833, 21075, 21730, 20783, 21044, 21144
GPX	20699, 20769
Greenhill	20717
Harman/Kardon	20582, 20702
Hitachi	20573, 20664, 21919
Hiteker	20672
Initial	20717, 21931
Integra	20627, 21924
Jamo	22003
Jaton	21078
JBL	21926, 20702
Jensen	21016
JVC	20558, 20623, 21940, 21901, 20867
jWin	21051, 21049
Kenwood	20490, 20534, 21063, 20682
KLH	20717, 21939, 21149, 21020
Konka	20720, 20719, 20711, 20721
Koss	20651
Landel	20826
Lasonic	20798, 21173
Lenoxx	21938
LG	20801, 20101
Liquid Video	21980
Lite-On	21158, 21058
Loewe	20511
Magnavox	20503, 20675, 21976, 21914, 20821
Malata	21159, 20782
Marantz	20539
Memorex	20695
Microsoft	20522
Mintek	20839, 20717
Mitsubishi	21521, 20521
Momitsu	21082
NEC	20785
Nesa	20717
Next Base	20826
Niro	22024
Norcent	21003, 20872, 21923, 21107
Onkyo	20503, 20627, 21924, 20792, 21985
Oritron	20651, 21980
Panasonic	20490, 21462, 21907, 21910, 21990, 21362, 21762, 21909, 21986, 20632, 21490, 21908, 21925, 22017
Philco	22000
Philips	20503, 20539, 20646, 20885, 20854, 21914
Pioneer	20525, 20571, 20638, 20632, 20631, 21902
Polaroid	21086, 21061, 21998, 21200
Polk Audio	20539
Portland	20770
Prima	21016
Princeton	20674
Proscan	20522
ProVision	20778
Qwestar	20651
RCA	20522, 20571, 20717, 20822, 21193, 21974, 21132, 21965, 21022, 21913
Regent	21938
Rio	20869
Rotel	20623
Rowa	20823
Saba	21977
Sampo	20752, 20698
Samsung	20490, 20573, 20820, 21932, 21075, 20899, 21979
Sansui	20695
Sanyo	20695, 20670, 21967, 20873
Sharp	20630, 20752
Sharper Image	21995, 21117
Sherwood	21043, 20770, 20633, 21077
Shinco	20717
Shinsonic	20533, 20839, 21931
Sigma Designs	20674
Sonic Blue	20869, 21970, 21099
Sony	20533, 21533, 20864, 21033, 21904, 22020, 21903, 21981, 20772, 21934
Sungale	21074
Superscan	20821
SVA	20717, 20860, 21105
Sylvania	20821, 20675
Symphonic	20675
Teac	21984, 20809
Technics	20490
Technosonic	20730
Techwood	20692
Terapin	21031
Theta Digital	20571
Tivo	21996
Toshiba	20503, 21154, 22006, 21045, 21996, 20695, 21988
Tredex	20803, 20800, 20799, 20804
TYT	20705
Urban Concepts	20503
US Logic	20839
V Inc.	21226, 21064
Vocopro	21027
Xbox	20522
Xwave	21001
Yamaha	20490, 20539, 20545
Zenith	20503, 20591, 21906, 20869, 22002

Setup Codes for Satellite Receivers

AlphaStar	00772
Chaparral	00216
Crossdigital	01109
DirecTV	00392, 00566, 00639, 01639, 01142, 00247, 00749, 01749, 00724, 00819, 01856, 01076, 01109, 00099, 01444, 01108, 01392, 01443,01640, 01442, 01414
Dish Network System	01005, 00775, 01775, 01505, 01170
Dishpro	01005, 00775, 01505, 01775
Echostar	01005, 00775, 01170, 01775, 01505
Expressvu	00775, 01775
Funai	00338
GE	00566
General Instrument	00869
GOI	00775, 01775
Goodmans	01246
Hisense	01535
Hitachi	00819, 01250, 00214, 00491, 00489, 00201
HTS	00775, 01775
Hughes Network Systems	01142, 00749, 01749, 01443, 01442, 01444
I-Lo	01535
JVC	00775, 01170, 00492, 01775
LG	01414, 01226
Magnavox	00724, 00722
Matsushita	00340, 00214, 00500
Memorex	00724
Mitsubishi	00749, 00491
Motorola	00869
NEC	00496, 01270
Next Level	00869
Panasonic	00247, 00701, 00214, 00500, 00340
Paysat	00724
Philips	01142, 00749, 01749, 00724, 01076, 00722, 00099, 01442
Proscan	00392, 00566
Proton	01535
RadioShack	00869
RCA	00392, 00566, 00855, 00143, 01392
Samsung	01276, 01109, 01108
Sanyo	00493, 01219
Sharp	00494
SKY	00856

INSTALLER
SOURCE SETUP WITH CAS-RC REMOTE CONTROL
MANUFACTURER IR DEVICE CODES

Sony	00639, 01639, 00294, 01640, 00163
Star Choice	00869
Tivo	01142, 01444, 01443, 01442
Toshiba	00749, 01749, 00790, 00486, 01285
UltimateTV	01392, 01640
Uniden	00724, 00722
US Digital	01535
USDTV	01535
Victor	00492
Voom	00869
Zenith	00856, 01856

Setup Codes for TVs

888	10264
A-Mark	10003
Abex	10032
Addison	11150, 10653, 10092
Admiral	10093, 10463
Advent	10761, 10817, 10815, 11933, 10783, 10842
Adventura	10046
Aiko	10092
Aiwa	11914, 11910
Akai	10812, 10702, 10030, 10672, 11903, 10264
Alaron	10179
Albatron	10843, 10700
Ambassador	10177
America Action	10180
Ampro	10751
Anam	10250, 10180, 10003, 10700, 10161, 10628
Anam National	10250, 10161, 10055, 10650
Anhua	10051
AOC	10451, 10093, 10180, 10060, 10030, 10178, 10019, 10185, 11150, 10018, 10052, 10474, 10003, 10092, 10179
Aolinpike	10264
Apex Digital	10748, 10765, 10767, 11943, 10879
Archer	10003
Audiovox	10451, 10180, 10875, 11952, 10802, 11951, 10092, 10623, 11937, 10003
Axion	11937
Baihe	10264
Baile	10001, 10391
Baohuashi	10264
Baosheng	10817
Beijing	10812, 10391, 10264, 10817, 10001
Belcor	10019
Bell & Howell	10154, 10016
BenQ	11032
Bradford	10180
Brockwood	10019
Broksonic	10236, 10463, 11911, 11938, 10003, 11905, 11935, 11929
Caihong	10817
Cailing	10748
Candle	10030, 10046, 10186, 10056
Carnivale	10030
Carver	10054, 10170
Celebrity	10000
Celera	10765
Changcheng	10051, 10817, 10001, 10391, 10264
Changfei	10817
Changfeng	10817, 10264
Changhai	10817
Changhong	10156, 10765, 10817, 10264, 10783, 10767, 11910
Chengdu	10817
Ching Tai	10003, 10474, 10179, 10092
Chun Yun	10000, 10180, 10161, 10474, 11150, 10092, 10843, 10003, 10179, 10700
Chunfeng	10264
Chung Hsin	10180, 10053, 11150, 10036, 10474
Chunsun	10817
Cinema	10672
Citizen	10060, 10030, 10039, 10280, 10056, 10186, 10046, 10092, 11928
Clairtone	10185
Clarion	10180
Colt	11906
Concerto	10056
Conrowa	10156, 10145, 10264
Contec	10180, 10157, 10185
Craig	10180, 10161
Crosley	10054
Crown	10180, 10039
Curtis Mathes	10047, 10054, 10154, 10451, 10093, 10060, 10702, 10030, 10145, 10166, 10466, 11347, 10039, 10056, 11147, 10016, 11919
CXC	10180
Daewoo	10154, 10451, 10180, 10030, 10178, 11661, 10474, 10003, 10628, 10032, 11150, 10092, 11928, 10627, 10700, 10056, 11909, 10170, 10391, 10623, 10019, 10672, 10039
Daytron	10019
Dayu	10391
Dell	11080
Denon	10145, 10511
Dumont	10017, 10019
Durabrand	10463, 10180, 10178, 10171, 11034, 10003
Dwin	10774, 10720
ECE	10037
Electroband	10000, 10185
Electrohome	10381
Elektra	10017, 11661
Emerson	10154, 10236, 10463, 10180, 10178, 10171, 10280, 10623, 10038, 11911, 11944, 10179, 10019, 11909, 11929, 10185, 10282, 11905, 10039, 11928, 10177
Envision	10030, 10813
Epson	10833, 10840
Ether	10030, 10161, 10003
Feilu	10817
Feiyan	10264
Feiyue	10817
Firstar	10236
Fisher	10154, 10159
Fortress	10093
Fujitsu	10186, 10853, 10179, 10809, 10683
Funai	10180, 10171, 10264, 11904, 10179, 10342
Furi	10145, 10817, 10264
Futuretech	10180
Ganxin	10817
Gateway	11756, 11755
GE	11447, 10047, 11454, 10051, 10451, 10180, 10030, 10178, 10092, 11147, 11919, 10055, 10027, 11917, 10135, 10282, 11347, 10021, 11907, 11922
General	10186
Gibralter	10017, 10030, 10019
Gintai	11150, 10474
Go Video	10886
GoldStar	10154, 10030, 10178, 11926, 10019, 10037, 11910, 10001, 10032, 10056, 11150, 10039
Goodmans	10360
Grunpy	10180, 10179
Haier	11034, 10768
Haiyan	10264, 10817
Hallmark	10178
Hankook	10180, 10030, 10178, 10019, 10056, 10628
Harley Davidson	11904, 10179
Harman/Kardon	10054
Harvard	10180
Havermy	10093
Hello Kitty	10451
Himitsu	10180, 10628
Hisense	10156, 10748, 10145
Hitachi	11256, 10156, 10030, 10178, 11145, 10145, 10038, 11245, 10092, 10027, 10381, 10036, 11150, 10056, 11904, 10151, 10165, 10019, 10186, 10032, 10039, 10157, 10016, 10179, 10474
Hongmei	10093, 11910, 10817, 10264
Hongyan	10817, 10264
Hua Tun	11150
Huafa	10145
Huanghe	10817
Huangshan	10264, 10817
Huanyu	11910, 10817, 10264
Huaqiang	10264
Huari	10145, 10264
Huodateji	10051
Hyundai	10849
Imperial Crown	10001, 10391, 10264
Infinity	10054
Inteq	10017
Janeil	10046
JBL	10054
JCB	10000
Jean	10156, 10051, 10236, 10092, 10179, 10003, 10474
Jensen	10761, 10815, 11933, 10817
Jiahua	10051
Jialicai	10264
Jinfeng	10051, 10817
Jinhai	11910
Jinque	10817, 10264
Jinta	10264, 11910
Jinxing	10054, 10156, 10145, 10264, 10037, 10817
Juhua	10817, 10264
JVC	10053, 10160, 11923, 11253, 10036, 10653
Kaige	10264, 10817
Kangchong	11910
Kangli	10001, 10817, 10391, 10264
Kangyi	10264
Kaypani	10052
KEC	10180
Kenwood	10030, 10019
KLH	10765, 10767
KLL	10037
Kloss	10046, 10024
Kolin	10180, 10053, 11150, 10036, 10474
Kongque	10264, 10817
Konka	10632, 10707, 11940, 10628, 10703, 11939, 10638, 10817
KTV	10180, 10030, 10185, 10039, 10280
Kuaile	10264
Kunlun	10051, 10817, 10264
LG	10060, 10030, 10178, 10056, 10442, 10856, 10001, 10038, 10700, 10019, 10037, 10474, 11178, 10003, 10032, 10006
Lihua	10817
Lloyd's	11904
Loewe	10136
Logik	10016
Longjiang	10264, 10817
Luxman	10056

INSTALLER
SOURCE SETUP WITH CAS-RC REMOTE CONTROL
MANUFACTURER IR DEVICE CODES

LXI	10047, 10054, 10154, 10156, 10178
Magnasonic	11928, 11913
Magnavox	11454, 10054, 10030, 10706, 11904, 10020, 11944, 10036, 10179, 10386, 11931, 10096, 10187, 11254, 11913, 10024, 10186
Magnin	11907
Majestic	10016
Marantz	10054, 10030, 10854, 10704, 11154, 10855
Maruman	10627, 10391
Matsushita	10250, 10650, 10161
Megapower	10700
Megatron	10178, 10145, 10003
MEI	10185
Meile	10264, 11910, 10817
Memorex	10154, 10463, 10150, 10178, 10179, 11920, 11927, 10016, 11911, 11926, 11924
Mermaid	10037
MGA	10150, 10030, 10178, 11907, 10019
Midland	10047, 10017, 10051, 10039, 10135, 10032
Minutz	10021
Mitsubishi	10154, 10250, 10093, 10236, 10180, 11250, 10150, 10030, 10178, 10381, 10836, 10036, 10179, 10817, 11150, 10474, 10019, 10868, 10056, 11917
Monivision	10843, 10700
Motorola	10093, 10055
MTC	10060, 10030, 10185, 10019, 10056
Mudan	10051, 10817, 10264
Multitech	10180
NAD	10156, 10178, 10866
Nanbao	11910, 10264
Nansheng	10817, 10264
National	10051
NEC	10154, 10156, 10051, 10053, 10030, 10178, 10046, 11150, 10056, 10165, 10186, 10474, 10036, 10882, 10381, 10817, 11704, 10170, 10264, 10019, 10497
Newave	10093, 10178, 11150, 10092, 10161
Nikko	10030, 10178, 10092
Nikon	11910
Norcent	10748, 10824
Noshi	10018
NTC	10092
Onking	10280
Onwa	10180
Optimus	10154, 10250, 10166, 11924, 11913, 10650, 11927
Optoma	10887
Optonica	10093, 10165
Orion	10236, 10463, 11911, 11905, 10179, 11463, 11929
Panasonic	10054, 10250, 10051, 10161, 11410, 11927, 11947, 10037, 10055, 10650, 11924, 11946, 11919, 11941
Panda	10051, 10706, 10817, 10264, 11910
Penney	10047, 10156, 10051, 10060, 10030, 10178, 10135, 11347, 11926, 10018, 10027, 10039, 11919, 10003, 10021, 10032, 11907, 10019
Philco	10054, 10180, 10030, 10178, 10628, 10474, 10020, 10037, 10096, 10186, 10774, 10019, 10032, 10056
Philips	11454, 10054, 10000, 10051, 10030, 10178, 10474, 10019, 11154, 10092, 10187, 10774, 10024, 10037, 10056, 10186, 10690, 10020, 10032
Pilot	10030, 10019, 10039
Pioneer	10166, 10038, 10866, 10679
Portland	10092, 10039, 10019
Prima	10761, 10815, 10783, 11933, 10817
Princeton	10717, 10700
Prism	10051
Proscan	11447, 10047, 11347, 11922
Proton	10030, 10178, 10001, 10039, 10466, 10003, 10052, 10474
Pulsar	10017, 10019
Qingdao	10051, 10817, 10264
Quasar	10250, 10051, 11924, 10165, 11919, 10055, 10650
RadioShack	10047, 10154, 10180, 10030, 10178, 10032, 10056, 11920, 10165, 11904, 10019, 10039
RCA	11447, 10047, 11454, 10000, 10030, 10178, 10679, 11247, 11917, 10090, 11948, 11147, 10019, 11907, 11922, 10135, 11958, 11047,11347, 10018, 11547, 10038, 11919, 10092, 11953
Realistic	10154, 10180, 10030, 10178, 10056, 10019, 10039, 10165, 10032
Rhapsody	10185
Rowa	10748, 10037, 10817
Runco	10017, 10030, 10603, 10497
Ruyi	10817
Saige	10817
Sampo	10154, 10093, 10030, 10178, 10171, 10032, 10052, 10474, 11755, 10039, 10700, 10036, 10092, 10650
Samsung	10154, 10156, 10060, 10812, 10702, 10030, 10178, 10019, 10056, 11060, 10092, 10474, 10774, 10032, 10817, 10090, 11903, 10264, 10766, 10814, 11150, 10179
Samsux	10039
Sanjian	10264
Sansui	10463, 11904, 11929, 11911
Sanyo	10154, 10156, 10180, 10145, 10376, 10474, 10036, 10893, 11907, 10159, 10280, 10424, 10799, 11154, 10157, 10264, 10381, 10798, 10088, 11150
Sanyuan	10093, 10817
Scimitsu	10019
Scotch	10178
Scott	10236, 10180, 10178, 10179, 10019
Sears	10047, 10054, 10154, 10156, 10178, 10171, 11926, 11904, 10056, 10159, 10179
Shancha	10817, 10264
Shanghai	10264, 11910, 10817
Shaofeng	10145, 10817
Sharp	10093, 10030, 10157, 10386, 10650, 10720, 10032, 10851, 10256, 10491, 10689, 10818, 10039, 10165, 10474, 10688, 10787, 10036, 11917
Sharper Image	11950
Shen Ying	10092, 10003, 10474, 10179
Shencai	10145, 10264
Sheng Chia	10093, 10236, 10179, 11150, 10474
Shenyang	10817, 10264
Shogun	10019
Signature	10016
Simpson	10187, 10186
Skygiant	10180
Skyworth	10748, 10264, 10037, 10817
Sony	11100, 10000, 10036, 10650, 11300, 10111, 11925, 10080, 10834, 11904
Soundesign	10180, 10178, 10179, 10186
Sowa	10156, 10051, 10060, 10178, 10036, 10092, 10474, 11150
Spectricon	10003
Squareview	10171
SSS	10180, 10019
Starlite	10180
Studio Experience	10843
Supre-Macy	10046
Supreme	10000
SVA	10748, 10587, 10865, 10872, 10768, 10871, 10870
Sylvania	10054, 10030, 10171, 11931, 10381, 11944, 10020, 10096
Symphonic	10180, 10171, 11913, 11904
Synco	10000, 10451, 10093, 10060, 10178, 10092, 10036, 10474
Tacico	10178, 10179, 11150, 10092, 10474
Tai Yi	11150
Taishan	10817, 10391
Tandy	10093
Tashiko	11150, 10650, 10092
Tatung	10054, 10154, 10156, 10051, 10060, 11150, 10474, 10036, 10055, 11756, 10003
Technics	10250, 10051
Technol Ace	10179
Techview	10847
Techwood	10051, 10003, 10056
Teco	10051, 10093, 10178, 10474, 10036, 10280, 10092, 10264, 10653
Teknika	10054, 10180, 10150, 10060, 10019, 10056, 10186, 10016, 10092, 10039, 10179
Telefunken	10702, 10056
Tera	10030, 10466, 10474
Thomas	11904
Tiane	10093, 10817
TMK	10178, 10177, 10056
TNCi	10017
Tobo	10748, 10264
Tongguang	10264
Toshiba	10154, 11256, 10156, 10060, 10145, 11918, 11945, 10381, 10832, 10036, 11704, 11936, 10264, 10650, 11150, 11656, 11935, 10161, 10509, 10845, 11356
Tosonic	10185
Totevision	10039
Trical	10157
Tuntex	10030, 10474, 10092
TVS	10463
Ultra	10391
Universal	10027
V Inc.	11756, 10885, 10864
Vector Research	10030
Victor	10250, 10053, 10160, 10650, 10376, 10036, 10653
Vidikron	10054
Vidtech	10178, 10019, 10036
Viewsonic	10857, 11755, 10885, 10864
Viking	10046
Wards	10054, 10030, 10178, 10020, 10080, 10165, 10866, 10019, 10027, 10056, 10111, 10179, 10016, 10021, 10096
Warumaia	10391
Waycon	10156
Westinghouse	10889
White Westinghouse	10463, 10186, 11909, 10623
Xiahua	10817, 10264
Xiangyang	10264
Xihu	10817, 10264
Xinghai	10264
Xinrisong	11910
Xuelian	11910
Yamaha	10030, 10838, 10019, 10833, 10769, 10839
Yapshe	10250
Yongbao	11910
Youlanasi	10817
Yousida	11910
Zenith	10017, 10463, 10178, 11911, 10016, 11909, 10092, 11904, 11929

Zonda	10003

Setup Codes for VCRs

ABS	21972
Admiral	20048, 20209
Adventura	20000
Aiko	20278
Aiwa	20037, 20000, 20307, 20468, 20124, 20406, 20348, 20479
Akai	20041, 20061, 20175, 20106
Alienware	21972
America Action	20278
American High	20035
Amoisonic	20479
Anam	20162, 20037, 20240, 20278, 20226, 21037
Anam National	20162, 20226
Asha	20240
Audiovox	20037, 20278
Beaumark	20240
Bell & Howell	20104
Blaupunkt	20226
Broksonic	20184, 20121, 20209, 20002, 20348, 20295, 21479, 20479
Calix	20037
Canon	20035, 21174, 20167
Carver	20081
CCE	20072, 20278
Changhong	20048, 20081
Citizen	20037, 20278, 21278
Colt	20072
Craig	20037, 20047, 20240, 20072, 20271
Curtis Mathes	20060, 20035, 20162, 20041, 20760, 21035
Cybernex	20240
CyberPower	21972
Daewoo	20045, 20104, 20278, 20210, 20368, 21278, 20637, 20046, 20212, 20561
Dell	21972
Denon	20042
DirecTV	20739, 21989, 21954, 21949
Dish Network System	21943, 21946, 21945, 21944
Dishpro	21944, 21943
Durabrand	20039, 20038
Dynatech	20000
Echostar	21943, 21946, 21945, 21944
Electrohome	20037
Electrophonic	20037
Emerex	20032
Emerson	20035, 20037, 20184, 20240, 20045, 20000, 20121, 20043, 20209, 20002, 20278, 20295, 20036, 20637, 21593, 20561, 21479, 20068, 20208, 20479, 21278, 20061, 20212
Euro1	21962
Expressvu	21944
Fisher	20047, 20104, 20066, 20054
Fuji	20035, 20033
Fujitsu	20045, 20052, 20366
Funai	20000, 20593, 21593
Garrard	20000
Gateway	21972
GE	20060, 20035, 20240, 21060, 20202, 20760, 21035, 20807, 20226, 20761
General	20045, 20366, 20052
Go Video	20643, 20526, 20432
GOI	21944
GoldStar	20037, 20209, 20038, 20226, 20225, 21237
Gradiente	20000
Haojie	20240
Harley Davidson	20000
Harman/Kardon	20081, 20038
Harwood	20072, 20068
Hauppauge	21992
Headquarter	20046
Hewlett Packard	21972
HI-Q	20047
Hitachi	20037, 20000, 20042, 20041, 20166, 20105, 20089
Howard Computers	21972
HP	21972
HTS	21944
Hughes Network Systems	20042, 21949, 20739
Hyundai	21951
iBUYPOWER	21972
Jensen	20041
JVC	20045, 20067, 20041, 21945, 20008, 21944, 20384, 20366
KEC	20037, 20278
Kenwood	20067, 20041, 20038, 20384
KLH	20072
Kodak	20035, 20037
Kolin	20043, 20041
LG	20037, 20045, 20042, 20209, 20038, 22010, 21037, 20040
Lloyd's	20000, 20208
Logik	20072
LXI	20037
Magnasonic	21278, 20593
Magnavox	20035, 20039, 20081, 20000, 20593, 20563, 20110, 21781
Magnin	20240
Marantz	20035, 20081, 21381
Marta	20037
Matsushita	20035, 20162, 20226, 21162, 20367, 20227
Media Center PC	21972
MEI	20035
Memorex	20035, 20162, 20037, 20048, 20039, 20047, 20240, 20000, 20104, 20209, 21237, 20046, 20479, 21162, 20348, 21048, 21262, 20307, 21037
MGA	20240, 20043, 20061
MGN Technology	20240
Microsoft	21972
Mind	21972
Minolta	20042, 20105
Mitsubishi	20067, 20043, 20041, 20061, 20807, 20173
Motorola	20035, 20048
MTC	20240, 20000
Multitech	20000, 20072
NAD	20058
National	20226
NEC	20035, 20037, 20048, 20104, 20067, 20041, 20038, 20040, 20008, 20370
Newave	20037
Nikko	20037
Nikon	20253, 20034
Noblex	20240
Northgate	21972
Olympus	20035, 20226, 21046
Onkyo	20222
Optimus	21062, 20162, 20037, 20048, 20104, 21048, 21262, 20593, 21162, 20058, 20432
Optonica	20062
Orion	20184, 20209, 20002, 20479, 20295, 21479
Panarex	21950
Panasonic	21062, 20035, 20162, 20077, 20226, 20616, 21162, 20225, 20367, 20227, 21035, 21262
Pansat	21950
Penney	20035, 20037, 20240, 20042, 20038, 21035, 20040, 20054, 21237
Pentax	20042, 20105
Philco	20035, 20000, 20226, 20479
Philips	20035, 20081, 20000, 20226, 20739, 21381, 20110, 20618, 21181, 20563, 21081, 21949, 20062
Pilot	20037
Pioneer	20042, 20067, 20058
Polk Audio	20081
Profitronic	20240
Proscan	20060, 20760, 21954, 20202, 21060, 20761
Protec	20072
Pulsar	20039
Qisheng	20060
Quarter	20046
Quartz	20046
Quasar	20035, 20162, 21035, 20077, 21162
RadioShack	20000, 21037
Radix	20037
Randex	20037
RCA	20060, 20035, 20240, 20000, 20042, 20807, 21060, 21989, 20106, 20761, 21035, 20058, 21964, 20105, 20226, 20760, 20880, 21954, 20077, 20202, 20453
Realistic	20035, 20037, 20048, 20047, 20000, 20104, 20066, 20046, 20062
ReplayTV	20614, 20616
Ricoh	20253, 20034
Runco	20039
Sampo	20037, 20048
Samsung	20240, 20045, 20212, 20760, 20210, 20432, 21014
Samtron	20643
Sanky	20048, 20039
Sansui	20000, 20067, 20209, 20041, 20479, 20271, 21479
Sanyo	20047, 20240, 20104, 20046, 20159, 20369, 20368
Scott	20184, 20045, 20121, 20043, 20210, 20212
Sears	20035, 20037, 20047, 20000, 20042, 20104, 20046, 20066, 21237, 20054, 20105
Sharp	20048, 20209, 20363, 20848, 20807, 20062, 20738, 21048
Shinco	20000
Shintom	20072
Shogun	20240
Singer	20072
Sonic Blue	20614, 20616
Sony	20035, 20032, 20033, 20000, 20253, 20639, 21232, 21972, 20636, 21032, 21957, 20034, 20586, 20640, 21956
STS	20042
Sunpak	20253
Sylvania	20035, 20081, 20000, 20043, 20110, 21781, 21593, 20593
Symphonic	20000, 21593, 20593
Systemax	21972
Tagar Systems	21972
Tashiko	20037
Tatung	20045, 20067, 20041, 20366, 20008
Teac	20000, 20041
Technics	20035, 20162
Teco	20035, 20037, 20048, 20041, 20038, 20040
Teknika	20035, 20037, 20000, 20052
Thomas	20000
Tivo	20739, 21957, 20636, 21956, 20618, 21503
TMK	20240, 20208, 20036
Toshiba	20045, 20067, 20043, 20041, 20210, 20384,

INSTALLER
SOURCE SETUP WITH CAS-RC REMOTE CONTROL
MANUFACTURER IR DEVICE CODES

	21008, 21972, 20366, 20845, 21503, 20066, 20212, 20828, 21145, 20008
Totevision	20037, 20240
Touch	21972
UltimateTV	21989
Unitech	20240
Vector	20045
Vector Research	20038, 20040
Victor	20067, 20041, 20008, 20384
Video Concepts	20045, 20040, 20061
Videomagic	20037
Videosonic	20240
Viewsonic	21972
Villain	20000
Wards	20060, 20035, 20048, 20047, 20081, 20240, 20000, 20042, 20072, 20062, 20212, 20760
White Westinghouse	20209, 20072, 20637
XR-1000	20035, 20000, 20072
Yamaha	20041, 20038
Zenith	20039, 20033, 20000, 20209, 20034, 20479, 21479, 21139, 20637
ZT Group	21972

Setup Codes for Video Accessories

ABS	01272
Alienware	01272
CyberPower	01272
Gateway	01272
Hewlett Packard	01272, 01267
Howard Computers	01272
HP	01272
iBUYPOWER	01272
InterVideo	01393
Jensen	01165
JVC	01384
Keyspan	01344
KWorld	01403
LG	01415
Linksys	01365
Macro Image Technology	01383
Media Center PC	01272
Microsoft	01272
Mind	01272
Motorola	01363
MyHD	01383
Northgate	01272
Panasonic	01120
Pinnacle Systems	01268
Pioneer	01010
Princeton	00113, 00295
Rabbit	00081
Roku	01486
Samsung	01190, 01490
Sensory Science	01126
Sharp	01010
SMC	01456
Sony	01272, 01324, 01364
Streamzap	01309
Systemax	01272
Tagar Systems	01272
TeleCaption	00171
Toshiba	01272
Touch	01272
Viewsonic	01272, 01329
ZT Group	01272

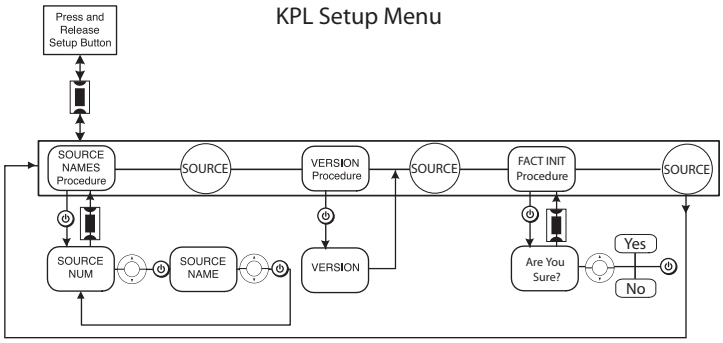
KPL Setup Menu

The KPL Setup menu is used to choose source names, check the version number and perform a Factory Initialization of the CAS44 controller. The menu is outlined in the diagram at right.

To access the Setup Menu, press and release the Setup button on the right side of the keypad until "SrcNm" (source names) appears on the display. Press the Source button to toggle through the menu options, then press the Power button to enter menus. Use the Volume Up/Down buttons to scroll through the selections. Press the Power button to enter a selection.

When finished, press and release the Setup button again.

KPL Setup Menu



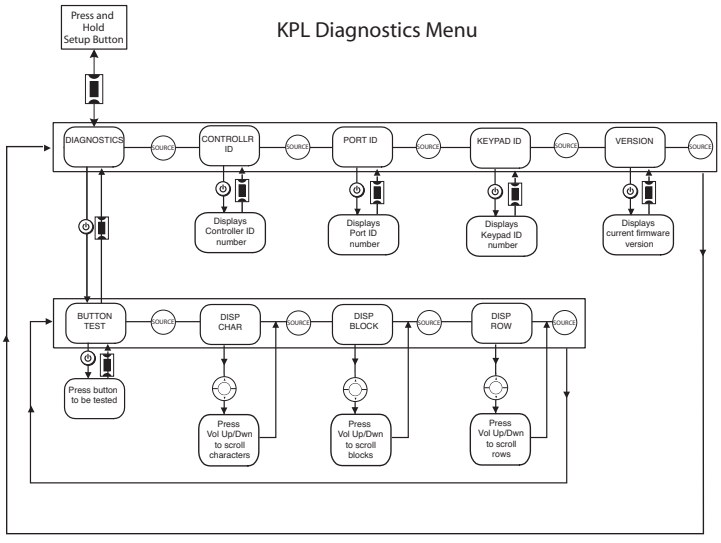
KPL Diagnostics Menu

The Diagnostics Menu allows the installer to run a diagnostic check on the keypad and to verify the firmware version of the keypad.

To access the Diagnostics Menu, press and hold the Setup button on the right side of the keypad until "Diags" appears on the display. The menus are outlined in the diagram at right.

When finished, press and release the Setup button again.

KPL Diagnostics Menu



REFERENCE
SOURCE NAMES - KPL KEYPAD

5-Character Display	Description	5-Character Display	Description	5-Character Display	Description
Aux	Auxiliary	DSS	DSS Receiver	MSvr1	Media Server 1
Aux 1	AUX 1	DSS 1	DSS 1	MSvr2	Media Server 2
Aux 2	AUX 2	DSS 2	DSS 2	MSvr3	Media Server 3
Blues	Blues	DSS 3	DSS 3	MiniD	Mini Disk
Cable	Cable	DVDCh	DVD Changer	Mood	Mood Music
Cbl 1	Cable 1	DVDC1	DVD Changer1	MornM	MorningMusic
Cbl 2	Cable 2	DVDC2	DVD Changer2	MP3	MP3
Cbl 3	Cable 3	DVDC3	DVD Changer3	Oldes	Oldies
CDCh	CD Changer	DVD	DVD Player	Pop	Pop
CDCh1	CD Changer 1	DVD 1	DVD Player 1	RDoor	Rear Door
CDCh2	CD Changer 2	DVD 2	DVD Player 2	Relig	Religious
CDCh3	CD Changer 3	DVD 3	DVD Player 3	RepTV	ReplayTV
CD	CD Player	FDoor	Front Door	Rock	Rock
CD 1	CD Player 1	Hers	Her Music	Sat	Satellite
CD 2	CD Player 2	His	His Music	Sat 1	Satellite 1
CD 3	CD Player 3	www.	Internet Radio	Sat 2	Satellite 2
Clscl	Classical	iPod	iPod	Sat 3	Satellite 3
Cmptr	Computer	Jazz	Jazz	SatRd	Satellite Radio
Cntry	Country	Kids	Kids Music	Src 1	Source 1
Dance	Dance Music	LD	Laser Disk	Src 2	Source 2
DigCb	Digital Cable	MSrvr	Media Server	Src 3	Source 3

5-Character Display	Description
Src 4	Source 4
Src 5	Source 5
Src 6	Source 6
Src 7	Source 7
Src 8	Source 8
Specl	Special
Tape	Tape
Tape1	Tape 1
Tape2	Tape 2
TiVo	TIVO
Tuner	Tuner
Tun 1	Tuner 1
Tun 2	Tuner 2
Tun 3	Tuner 3
TV	TV
VCR	VCR
VCR 1	VCR 1
VCR 2	VCR 2
(XM)	<<<XM>>>
XM 1	XM 1
XM 2	XM 2

5-Character Display	Description
XM 3	XM 3
XMRad	XM Radio

KP4 Labels
AM/FM
AM/FM 1
AM/FM 2
CABLE
CD
CD 1
CD 2
DVD
DVR
iPod
RADIO
SAT
SERVER 1
SERVER 2
SERVER 3
SIRIUS
TAPE
VCR
XM1
XM2

TECHNICAL SPECIFICATIONS

CAS44 Controller/Amplifier

Dimensions:	17"W x 11.5"D x 3.9"H (43 x 29.2 x 10 cm)
Weight:	17 lbs. 6.5 oz. (7.9 kg)
Power Supply:	VAC 100-120 @3A or 220-240V @1.25A 50-60Hz
Fuse Rating:	110V input; F3.0A H 250V US and Canada
	240V input; T1.25A H 250V Europe
Frequency Response:	20Hz-20kHz +0/-2.5dB
Watts per channel:	20W RMS into 8 ohms
Total Harmonic Distortion:	<0.10%
Signal to Noise Ratio:	>90.0 dB A-weighted / >88 dB unweighted
Audio Source Inputs:	4
Audio Zone Outputs:	4 speaker level (8 ohms)
Input Impedance:	50 kohms
Max Source Audio Input:	2.2 Vrms
Trigger Output:	12VDC 100mA Max
Trigger Input:	12VDC

WARRANTY & REPAIR

The Russound CAS44 is fully guaranteed against all defects in materials and workmanship for two (2) years from the date of purchase. During this period, Russound will replace any defective parts and correct any defect in workmanship without charge for either parts or labor.

For this warranty to apply, the unit must be installed and used according to its written instructions. If service is necessary, it must be performed by Russound. The unit must be returned to Russound at the owner's expense and with prior written permission. Accidental damage and shipping damage are not considered defects, nor is damage resulting from abuse or from servicing by an agency or person not specifically authorized in writing by Russound.

This Warranty does not cover:

- Damage caused by abuse, accident, misuse, negligence, or improper installation or operation
- Power surges and lightning strikes
- Normal wear and maintenance
- Products that have been altered or modified
- Any product whose identifying number, decal, serial number, etc. has been altered, defaced or removed

Russound sells products only through authorized Dealers and Distributors to ensure that customers obtain proper support and service. Any Russound product purchased from an unauthorized dealer or other source, including retailers, mail order sellers and online sellers will not be honored or serviced under existing Russound warranty policy. Any sale of products by an unauthorized source or other manner not authorized by Russound shall void the warranty on the applicable product.

Damage to or destruction of components due to application of excessive power voids the warranty on those parts. In these cases, repairs will be made on the basis of the retail value of the parts and labor. To return for repairs, the unit must be shipped to Russound at the owner's expense, along with a note explaining the nature of service required. Be sure to pack the unit in a corrugated container with at least three (3) inches of resilient material to protect the unit from damage in transit.

Before returning a unit for repair, call Russound at (603) 659-5170 for a Return Authorization number. Write this number on the shipping label and ship to:

Russound
ATTN: Service
5 Forbes Road
Newmarket, NH 03857

Due to continual efforts to improve product quality as new technology and techniques become available, Russound/FMP, Inc. reserves the right to revise system specifications without notice.

CAS44
Multisource Multiroom
Audio Controller/Amplifier

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